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A British Medical Association Lecture

ON

SEDATIVES IN LABOUR, PARTICULARLY "TWILIGHT SLEEP."

DELIVERED BEFORE THE LEICESTER AND RUTLAND DIVISION

BY

JOHN S. FAIRBAIRN, M.A., B.M.OXON., F.R.C.P., F.R.C.S.,

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SOME preliminary observations are necessary to emphasize the important part played by sedatives in modern obstetric practice by removing influences inhibiting uterine action.

The chief characteristic of present-day midwifery as compared with that of a generation ago is its permeation with the ideals of preventive medicine, with the preservation of normal function in all systems of the body, as its primary aim. In midwifery our aim must likewise be to secure the normal throughout the processes of reproduction, in pregnancy, labour, lying-in, and lactation, and all interference with or substitution for normal function must be regarded as a failure to attain that end. In accordance with this principle success in obstetric practice will be measured by the proportion of natural pregnancies and labours obtained without disability in mother or child.

Suppose that by careful ante-natal supervision the various discoverable causes of disordered function in labour have, so far as possible, been eliminated—the misfits, malpresentations, malpositions, and such-like—and the physically well-developed and healthy woman, in whom no abnormality, general or obstetric, is found, is alone under consideration, can we be certain that she will have a normal labour and deliver herself without artificial aid? We cannot, and why? Because there may be some failure of the natural powers—particularly of the final expulsive powers—usually the failure to overcome the last obstacle to the birth, the resistance of the muscular pillars at the outlet. Hence the frequency of the low forceps operation, particularly in young and healthy primiparae, in whom fatigue is readily produced by the longer labour. The failure here is generally ascribed to the resistance of the soft parts—a factor undoubtedly—but, with the uterus working strongly and good expulsive efforts, the soft parts would give; in other words, relative weakness of the expulsive powers occurs. No hard-working, self-respecting uterus will be checked for long by soft parts. The failure of function is the non-development of the strong final contractions that are normally excited by the distension of the vagina and outlet.

The possible causes of even these minor failures to complete natural parturition and how they may be removed or circumvented must be thought out by all who approach midwifery in the proper attitude of mind. Those who continue without further thought to fall back on a substitute for the natural powers are living in the mechanical era (of which more anon) and are not imbued with modern ideas. Commonly the reasons are fatigue and weariness of the patient together with the inhibiting effects on uterine action of mental states, such as fear and anxiety, and the elimination of these inhibiting influences by sedatives is an important part of the management of labour.

FREQUENCY OF ARTIFICIAL AID.

Why has assistance in labour become so common that it has been stated that parturition is "pathologic" rather than "physiologic" in the women of to-day? Artificial delivery is more frequent among the more educated and leisured classes. The woman inured to hardship delivers herself easily and is up and about in a short time, for she can submit to conditions impossible to her more imaginative and sensitive sisters. Why are the women, especially of the more leisured classes, to-day less capable of reproducing their species than their great-grandmothers, in whose days forceps delivery occurred in but a fraction of the cases in which it is now practised?

The attitude of the medical profession has undoubtedly played an important part, for medicine as a whole, and obstetrics with it, has passed through a phase in which substitutes for nature have been developed and perfected—for example, the strong biceps of the accoucheur instead of the uterine muscle, artificial feeding instead of breast-feeding, and the excessive resort to Caesarean section. Also the relief of pain is expected from childhood onwards, for the extraction of a tooth or other minor surgical procedure, and women to-day feel the right to expect from their doctors the relief in labour that chloroform and the forceps can give. Many practitioners, indeed, advocate what they term the "humanitarian" indication for forceps delivery, and it is on that ground that the one who acknowledged to a forceps rate of 100 per cent., "if I am there in time," could be justified. Certainly the rate is five or six times greater in family than in hospital practice. There has thus come about a change in the mental attitude of the women themselves; they are not prepared to do without the artificial relief that the doctor can give, and have not confidence enough in their unaided efforts, and, in the conditions in which family practice is conducted, the pressure on the doctor to give his aid is often too strong to be resisted.

MAINTENANCE OF NATURAL FUNCTION.

Although the securing of natural function in parturition is a more difficult problem than it was, our object must be to find an answer to the question, How can we circumvent the social and psychical changes that have come with advances in medicine and with the changed attitude of mind in which the reproductive function is approached by the women of to-day?

The problem may be stated in terms of the physiology of labour. There are certain factors that augment uterine action—for example, the reflex effects of the dilatation of the cervix, the distension of the vagina, and the stretching of the perineum by the foetal head; and certain inhibitory factors—distension of bladder and bowel, fatigue and emotional states, together with the loss of the augmenting effects by the diminished reflex response that comes with anaesthesia and other means of lessening sensitiveness to pain. The question thus resolves itself into considering how far the good results of anaesthesia, analgesia, and sedatives generally can be obtained with the least loss of augmentor reflex response. Further, it must be our object to lessen pain and distress and avoid the more protracted recovery that may follow any severe nervous strain.

Recognizing that the factors mentioned are largely psychical, something can be done by educating the pregnant woman, and encouraging her to regard herself as better able to perform a natural function than her granddam, and as well able as the hardier woman of the working classes; also by explaining what she has to do herself and when she can get relief. Every one of us must acknowledge the value of the first-class midwife in keeping up her patient's confidence and encouraging her to make the most of her own powers. Something can be done in ante-natal and intra-natal management in this direction.

SEDATIVES.

To come to our subject, the use of sedatives. You all use them to some extent, and it does not matter in what form, but my own preference is for morphine, occasionally combined with a sleeping draught, such as a bromide and chloral mixture. A sedative may be indicated early in labour when the onset of the true rhythmic pains is delayed, and the woman is worried and fatigued by short, sharp pains that appear to do no good, or by a period, perhaps a day or more, of "niggling" pains, before the long, steady, and useful contractions are established. Also when the patient is tiring any time before the os is fully dilated and the head low in the pelvis. If she is left alone she may lose self-control, weep and throw herself about, and later become played out, and her uterus will not function properly. A hypodermic injection of morphine should be given when she is tiring, and before she is tired; the rest and comparative relief will enable her to regain her self-control, and uterine action will return with fresh strength after a period of rest. The relief to the patient also brings relief from the insistent pressure of distracted relatives that is so trying in domiciliary midwifery.

Punch, always a keen critic of the frailties of the day, hit it off in that delightful picture of the doctor assuring the prospective and overwrought father that in all his midwifery experience he had not yet lost a father.

Another indication for the use of a sedative is what is called rigidity of the os. Commonly it is spasmodic, organic rigidity being very rare, and is most often met with in nervous, highly strung, but perfectly healthy primiparae. This rigidity is not to be considered as a specific condition of the cervix, for it is merely the expression of poor or erratic uterine action; with good contractions there will be good dilatation, with poor contractions poor dilatation. Rigidity frequently accompanies the cases already described in which the pains are short and sharp and without rhythm, sometimes termed "colicky" action. The rigid os is to be regarded as a sign of disordered uterine action, and of the kind that yields to an opiate or other sedative.

Whenever there are signs of commencing fatigue, loss of control, and irregular uterine action, a liberal dose of some sedative should be given and repeated if need be. Practically all our emergency cases of delayed labour sent into hospital for immediate delivery—in many of which premature efforts at instrumental delivery have been made—are given morphine (1/4 or 1/3 grain), and it is surprising how many of those without gross mechanical difficulties will deliver themselves after four or five hours' sleep—and sometimes catch us out by performing an unlooked-for "B.B.A." My experience of this type of case in hospital and of cases seen outside that take on a fresh aspect after a few hours' sleep has made me feel that enough use is not made of a sedative sufficient to secure for the patient a rest before resort is made to artificial delivery. If the head is near the outlet it is too late to secure rest, and simpler to try first an injection of pituitrin as a stimulant to uterine action, and if not successful in a quarter of an hour to deliver by the forceps. Also, morphine at this stage is liable to result in the foetus being born narcotized.

Twilight Sleep.

The morphine-hyoscine narcosis, or "twilight sleep" (Gauss), must be regarded neither as an anaesthetic nor an analgesic, for its aim is the production of amnesia of the events throughout labour. Its success is complete if the mother awakes from sleep or drowsiness following her delivery without any recollection of what she has been through, and if neither she nor her infant shows any ill effect from the narcosis. Dulling of pain to some degree is usually obtained, but the real objective is to abolish the memory of the recurrent pains, and thereby their psychical effects. The patient may groan during uterine contractions, wake up and perhaps raise her head and shoulders from the bed, exhibit the facial expressions of pain, and even complain bitterly and emphatically, but will sink back into a recumbent position and drowsy state when the contraction passes off, and no mental impression that can be recalled will remain. The successful induction of amnesic narcosis removes almost entirely the inhibitions of uterine action of emotional and psychical origin, greatly lessens fatigue, and increases the chances of rapid recovery without the nervous exhaustion that may follow a painful and trying experience in a sensitive subject.

It may be said that labour in such circumstances is not physiological, and it is true to the extent that drugging of a patient in this way diminishes the reflex response to those stimuli augmenting the strength of the contractions; but, on the other hand, it represents the attempt to remove those factors interfering with good expulsive power that the circumstances of our modern social life have brought about. Its use will be justified if the cases in which the narcosis is adopted are limited to those in which the avoidance of fatigue and the exclusion of inhibitory factors will give greater benefit than the disadvantages of lessening reflex response.

Method.

It is best to begin as soon as rhythmical labour pains are definitely established and cause distress. Some would have a degree of dilatation of the os to a size admitting one or two fingers, but examinations for the purpose of determining the amount of dilatation are not advisable. As will be explained later, it is, however, nearly always possible to begin induction after labour has been in progress some time by starting with light chloroform anaesthesia.

It is very important that the usual preliminaries preparatory to labour, particularly a thorough emptying of the bowels, should be got over before induction of the narcosis is begun, in order to lessen disturbance of the patient. Isolation and quietude for the patient are essential, to exclude so far as possible all external stimuli. She should be shaded from the light, her ears plugged with wool, and disturbed as little as close watching of her condition and the necessary attentions will allow.

The dosage is best described by taking a standard one and suggesting modification in one or other direction in certain conditions. The usual initial dose is 1/4 grain of morphine with 1/150 grain of hyoscine, followed at hourly intervals by 1/450 grain of hyoscine. The morphine is rarely increased beyond 1/4 grain, and is repeated only in special circumstances and in smaller quantity, but the hyoscine may be increased to 1/100 grain for the initial dose, or more often to 1/300 grain for the second dose if the response to the usual initial dose is insufficient. The general rules for determining the best dosage in the individual case may be stated thus. The standard dose should be increased in first labours and for big women of strong physique, and for imaginative, oversensitive, and nervous patients. Morphine 1/6 grain and hyoscine 1/450 grain will suffice for multiparae, for women of a small or frail build, and for those of an easy-going unimaginative type. If begun early in labour, and the patient is a big, strong primigravida intolerant of pain, the first dose should be morphine 1/4 grain and hyoscine 1/100 grain, the frequency of the injections and dosage of hyoscine afterwards being determined by the effect obtained. Idiosyncrasy to hyoscine must be watched for, and the subsequent injections lessened if need be.

The standard time for the subsequent injections of hyoscine is, roughly, at hourly intervals, but in practice the frequency is determined by the effect produced, the memory test being adopted as an index of the amnesic state. The time of the second injection may be anticipated if the response to the first is feeble, but, generally speaking, it is better to keep to the 1/450 grain at shortened intervals rather than increase the amount to 1/300 grain, unless very little effect has been obtained from the first dose.

The memory test is carried out by taking some fairly common object that will not greatly tax the patient's muddled intelligence to recognize, showing it to her, and asking what it is. An hour or so later she may be roused, and asked what she was shown. If she has no recollection of it, the object is produced and the question repeated. If the object presented to her brings back no glimmer of its previous presentation, amnesia is complete. The test is not reliable; often women are able, by an effort at the time, to remember objects previously shown, but are found to have lost all memory of the events in the labour after it is over. Also repeated rousing for this purpose is an interruption to the narcotic state. The test should not be begun till after the second or third injection, and, so far as possible, should be carried out when the patient is disturbed for some other reason—for example, for a drink, a hypodermic injection, to pass water, or have a catheter passed. Also, if any attention of this kind of a sufficiently distinctive character is repeated, the opportunity can be taken to see if the memory of the previous occasion remains.

With further experience the need for repeating the hyoscine injections can be largely determined by noticing whether the patient is fully under the influence of the drug and by watching for signs of overdosage. When fully narcotized she should be drowsy, dosing between pains, but wakened up by them, and relapsing at once into drowsiness again. Should she show no evidence of disturbance during the pains no further injections should be given until some effect becomes noticeable. Usually, after the second or third injection, an interval of two or more hours may be allowed before the next one, provided quietness and drowsiness continue.

Flushing of the face and dilatation of the pupils are usually present early and are not necessarily indications of overdosage. The pulse and respiration rate should be

carefully observed, as any marked alteration either in the direction of slowing or quickening is an indication for ceasing administration for a time. With overdosage the pulse rate is increased and the respiration rate slowed, and therefore a watch should be kept on any disturbance of the ratio between the two. Usually there is at first some slowing of the pulse rate, probably from the previous excitement and subsequent quietude. When once the pulse rate has settled down, however, it should not alter greatly.

Unfortunately patients are very variable in their response to hyoscine; most of them conform to the type described—sleepy or drowsy between pains but roused by them. Some, however, may remain awake and yet be found afterwards to have complete amnesia, and others may become restless and troublesome. There is always considerable mental confusion, but unless it is associated with excitement and difficulty in controlling the patient, it is not an indication for interfering with the injections. Some degree of restlessness is usual in the early stage, before the complete effect of the drugs is obtained, but in occesional instances it may become very troublesome. It is an indication of overdosage with hyoscine, and may require further administration to be discontinued. A watch must be kept on the bladder, and if the patient is unable to empty it voluntarily the catheter must be passed. Thirst is always well marked and leads to frequent drinks being given. Food, usually liquid, must be given in all lengthy cases.

It will be clear from this general account of its administration that the amnesic narcosis calls for the continuous observation of the patient by a skilled nurse and constant attention by the practitioner in charge. The patient may appear quiet and yet wake up suddenly and, in her mental confusion, get up and wander about and do strange things—for example, hide herself or try to escape. No bowls of poisonous lotion should be left within easy reach, for thirst may drive her to sample the first fluid that comes to hand. Also, to get good results calls for experience in the method.

There are sundry modifications that make its partial use easier to those with little experience of it. Its effects are most valuable in the first stage of labour. In the second stage when the stronger expulsive pains and the distension of the outlet are likely to rouse the patient, resulting in her reconstructing the whole labour and making the induction a failure, it is often easier to fall back on a light general anaesthesia, especially once the outlet begins to gape and birth is imminent. If that is done, it may not be "twilight sleep," but amnesia is secured. Also, if the injections have been discontinued or the patient is out of control, chloroform anaesthesia may be induced—just sufficient to allow of a full examination being made—and if the os is not fully dilated or the head not deep in the pelvic cavity, another injection of morphine—a small dose, say 1/8 grain—may be given which will take effect before the general anaesthesia is recovered from.

The great objection to the routine adoption of this form of narcosis in labour is, to my mind, its undoubted effect in lessening the expulsive contractions of the uterus and voluntary bearing-down efforts, and thereby increasing the number of low forceps operations. The effect on the child—which appears to be almost entirely due to morphine—is of minor moment, as, though born apnoeic and disinclined to breathe, if left alone respiration will be established in a short time. The injection of pituitrin 1/2 c.cm. (that is, up to 5 units) will reduce the number of forceps deliveries, but leave them still above the average, as we found when the method was tried out in a series of cases not specially selected as suitable. The effects on the third stage are not noticeable. Hence my view is that both a careful selection of cases should be made and strict adherence to Gauss's method left to those with long experience of it.

Selection of Cases.

It is valuable for all patients in whom a long and tedious labour may be anticipated, particularly cases of slight disproportion between the head and pelvis, when a long time for moulding is essential. Many of these cases would be of the kind designated as "trial" labours, and in them it is undoubtedly of great service in lessening fatigue; as soon as the head is well down further administration of hyoscine may be stopped and, if the patient delivers herself, a little chloroform given during the birth of the head. If delivery by forceps is required, anaesthesia is necessary. It is also useful in cardiac cases that have been under ante-natal treatment for decompensation, by lessening fatigue and strain during labour.

Apart from cases in which there is a cause or clear reason for avoiding fatigue, this method is adopted occasionally for cases in which the temperament or excitable state of the patient, especially if associated with a slow and erratic onset of labour, suggests it. It is often asked for by women who have either had a trying experience in a previous labour or have a great dread of what is before them and are without confidence in their unaided powers of going through it. It is always advisable in a medical school to select cases of this type now and then for instructional purposes, so as to keep nurses and students acquainted with the method.

SUMMARY.

Fatigue is of the mind as well as of the body, and is hastened and aggravated by continued pain without relief, by fear, and by loss of self-control, and is a potent factor in the production of inertia and other disorders of uterine function.

With experience on the part of doctors and nurses, success in obtaining amnesia will be attained in nearly three-quarters of the cases, and some relief in the remainder. A great saving of nervous strain is undoubtedly effected by this form of narcosis, but if carried through to the end it has the fatal objection of increasing intervention in labour. For that reason, save in a few special cases, such as I have indicated, I prefer to use morphine, with or without a sleeping draught, or the single initial injection of morphine and hyoscine as and when it seems to be required.

It will be clear that much patient study and observation is required before a solution is reached of the problem of how the relief of the pains of labour and the avoidance of fatigue and nervous strain can be secured without interfering with normal function. Much more must be done in exploring the causes of failure to complete a natural function among physically well-formed women, and so long as the artificial substitute of the forceps is acquiesced in, so long will obstetric practice fail to become saturated with the principles of preventive medicine.

EPIDEMIOLOGICAL OBSERVATIONS ON HOOKWORM INFECTION.

DISCUSSION OF THE QUESTION OF IMMUNITY AND SPECIFIC REACTIONS OF THE HOST IN HELMINTHIC INFECTION.*

BY

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AT the invitation of the Government of the Argentine, two years ago, I had, together with Dr. Roberto Dios and Juan Zuccarini, the opportunity of studying the hookworm question in the northern departments of the province of Corrientes, immediately adjacent to Paraguay. The Argentine is in general practically free from endemic hookworm infection, although the frontiers between it and Paraguay are heavily infested with the worms, especially *Necator americanus*. According to Soper (1925) Necator seems to have been introduced from the north by African negroes: Paraguay was infested with the same parasite apparently only fifty to sixty years ago by Brazilian negro soldiers. *Ancylostoma duodenale* has apparently a much longer history in South and Central America, and either was brought over by the Spaniards or, as suggested by Soper (1927), is indigenous to the Indian race. In Paraguay and North Corrientes, however, only 5 to 6 per cent. of the expelled human hookworms belong to this species.

* Being a lecture delivered, under the auspices of the University of London, at the London School of Hygiene and Tropical Medicine on March 12th, 1929.

In the north of Corrientes we found not only that practically 100 per cent. of the rural population was infested with hookworms, but that egg count (by Stoll's method) revealed an unusually high degree of egg output, corresponding to an average of approximately 430 hookworms per person—so far as such estimates can be exact.

I cannot discuss here the details of our results. The most striking fact was that, in contrast to nearly all the other hookworm-infested countries, we found everywhere in North Corrientes an average egg production about two or three times as high in children and young adolescents of both sexes as in persons over the age of 20 (see Table I).

TABLE I.—*Average Output of Hookworm Eggs per gram of Mushy Stool per Person from 396 Inhabitants of North Corrientes.*

Age (Years).	Males.		Females.		Total.	
	No.	Hookworm Eggs.	No.	Hookworm Eggs.	No.	Hookworm Eggs (Hookworms).
3 to 10	96	4,3.6	47	5,757	143	4,816 (ca. 330)
11 to 20 ...	127	5,949	48	9,330	175	6,885 (ca. 550)
21 to over 50 ...	47	1,965	31	2,437	78	2,152 (ca. 170)
3 to over 50 ...	270	4,683 (ca. 380)	126	6,313 (ca. 510)	396	5,205 (ca. 430)

The figures in brackets are rough estimates of the number of hookworms present.

Among the latter group we found no cases with more than approximately 800 hookworms, although they may occur occasionally (see Fig. 1). But, even if we omit the

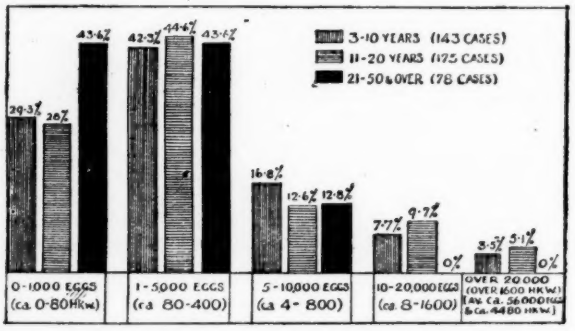


FIG. 1.—The same material as in Table I, arranged according to the output of hookworm eggs in relation to age groups.

unusually high infections with over 1,600 hookworms occurring in some of the young people, the degree of infection drops very decidedly after the twentieth year (see Fig. 2).

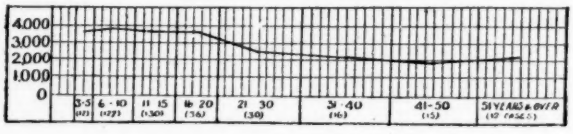


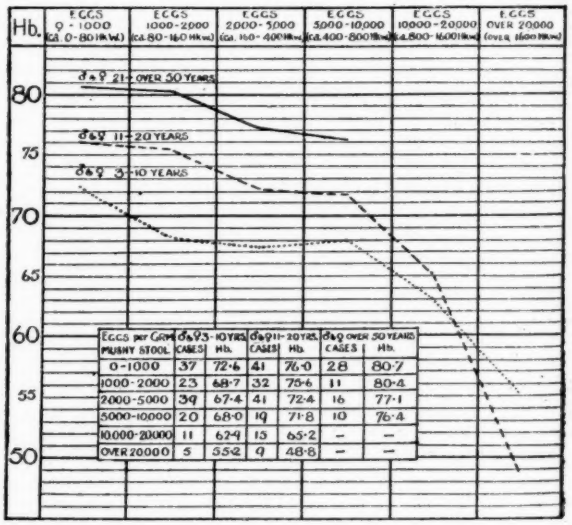
FIG. 2.—The same material, less 13 cases each with an output of more than 20,000 hookworm eggs per gram of faeces (equivalent to over 1,600 worms).

It may seem strange that, in contrast to our findings in Corrientes, the degree of infection among adults examined by Soper in Paraguay was three or four times as high as among children. The latter, however, were living under the hygienic conditions of a splendid orphan asylum, which precluded new infections, and we can corroborate the statements of Mhaskar and of Chandler that, under such conditions, the number of hookworms diminishes rapidly even in a few months. Indeed, when Soper was making his excellent and very careful examinations, he could not have known of Chandler's observations on this rapid "hookworm loss": observations which are absolutely in contrast to the previous statements of Smillie. If Chandler's observations are confirmed, many of the previous statistics will be practically useless in so far as they are based on the examination, not of the general population, but of prisoners, orphans, and so on.

While North Corrientes, like Paraguay, may be one of the most heavily hookworm-infested countries of the world, the clinical damage among the population is apparently much less in evidence than that reported from other Necator countries (such as Brazil) having a much lighter infection. This is probably because of the better standard of life, especially the better nutrition, of the Corrientes people (they consume a great deal of meat), which makes them more tolerant to their parasites than is the case with the Brazilian peasants, who, according to Smillie, are badly nourished and much overworked. That malaria, so frequent in many hookworm-infested countries, seems to be practically absent among the population of North Corrientes is doubtless another important factor in their favour, and perhaps the admixture of much Indian blood also increases their tolerance.

At any rate, the people of Corrientes in general give one the impression of being healthy, intelligent, and lively. In spite of their intense hookworm infection, their average haemoglobin rate, measured with the same individual instrument, was almost the same as among the healthy members of our institute at Hamburg, being 81.7 for the males and 74.6 for the females on the old scale of Sahli. Among the children and young adolescents of North Corrientes it is true there occur very heavy and even deadly cases of hookworm anaemia. On the other hand, only about 10 to 15 per cent. of the young people showed a loss of 10 units or more of the Sahli scale, the tolerance of the older ones being so remarkably high that the boys—but not the girls—between the ages of 10 and 20 could, without any average loss of haemoglobin, stand an infection with approximately 160 to 240 hookworms, although 100 Necator or less is considered in other countries as the limit. Moreover, the body size and weight of the school children corresponded closely to those of hookworm-free districts, such as Buenos Aires and Paris.

Surely, one can feel weak and miserable enough even without anaemia or any other objective symptoms of illness—a fact apparently also true of many hookworm cases. Nevertheless, one becomes more and more convinced, I think, that in the past the damage caused by a slight hookworm infection in native populations has often been overestimated, at least as far as Necator is concerned; *Ancylostoma duodenale* is doubtless by far the more dangerous parasite.



EGGS per Gram MUSHY STOOL	♂♀ 3-10 YRS. CASES	Hb.	♂♀ 11-20 YRS. CASES	Hb.	♂♀ OVER 50 YEARS CASES	Hb.
0-1000	37	72·6	41	76·0	28	80·7
1000-2000	23	68·7	32	75·6	11	80·4
2000-5000	39	67·4	41	72·4	16	77·1
5000-10000	20	68·0	19	71·8	10	76·4
10000-20000	11	62·4	13	65·2	–	–
OVER 20000	5	55·2	9	48·8	–	–

FIG. 3.—The average haemoglobin index (old Sahli scale) in 357 persons in North Corrientes, arranged according to the output of hookworm eggs.

Figure 3 shows in the vertical columns the haemoglobin value, according to the old Sahli scale (with about 80 for the normal blood of an adult); the horizontal divisions correspond to the "egg output," and therefore approximately to the number of hookworms present.

In contrast to the less tolerant children (up to 10 years), the adolescents from 11 to 20, as well as the adults, tolerate about 80 to 160 hookworms without an appreciable loss of haemoglobin. An egg production corresponding approximately to 160 to 400 hookworms is associated in all the age groups with an average haemoglobin loss of about 4 to 5 points; but it is remarkable that it is not higher in an infection with about 400 to 800 worms, the curve falling decidedly only above this limit.

The fact that the figures of Smillie from Brazil and of Carr from Mexico show the same tendency as found in Corrientes seems to justify the hypothesis, indicated by Smillie, that the host infected with a certain number of hookworms insufficient to overwhelm its resistance acquires the faculty of compensating in some way for the blood damage. Some of our preliminary experiments seemed to point to the formation of antibodies against haemolytic substances produced by the parasite.

As is well known, a haemolytic substance has been extracted from Ancylostoma by various workers; and my collaborator Dr. Kikuth found it several times in quite high concentration in the Ringer solution in which living *Ancylostoma caninum* had been kept at body temperature for some days, although for some unknown reason the haemolysin was not always present. The substance, not being destroyed by boiling, is apparently not of an albuminous nature; this fact, however (as will be discussed later), would not exclude our haemolysin from still acting as a "true antigen" producing antihaemolysin. But this possibility is apparently not realized, since the serum of our Ancylostoma dogs did not fix the haemolytic principle more than does normal blood serum. Moreover, the erythrocytes of the infected animals were destroyed by the haemolysin to the same degree as those of normal ones. Whether the haemolytic substance is active only *in vitro* remains to be investigated. However, according to de Langen and Djamil there is no evidence of chronic haemolysis in hookworm disease; apart from the intestinal bleedings there is apparently only toxic damage to the haemopoietic organs. If this view is correct, our haemoglobin curves from Corrientes, etc., would indicate only that the bone marrow can adapt itself, to a certain extent, to this chronic intoxication.

The literature concerning other specific helminthic products has increased so greatly that I can point out only some of the more important facts.

The precipitin reaction, and especially the complement-fixation test, are of some practical value for the diagnosis of Echinococcus and Bilharzia infections. Often the complement-fixation reaction is present also in patients harbouring *Ascaris lumbricoides*, and we found it positive in experimental animals repeatedly injected with Ringer's solution containing the products discharged *in vitro* by this parasite. The fact that after the removal of the Echinococcus cyst the complement-fixation test soon becomes negative, while, on the other hand, the "Casoni reaction" of the skin remains positive for a very long time (possibly for ever), seems to indicate that the two reactions are of a different nature, although they may be produced by the same worm products.

The active principle of the fluid from Echinococcus cysts causing the "Casoni reaction," like the antigen of other cutaneous reactions, is not of an albuminous or lipoid nature, because, as shown in 1926 by Lemaire and Thiodet, it passes through a dialysing membrane. According to the recent excellent paper of W. Jadassohn and our own experiments, this holds good also for the Ascaris substance, which provokes an itching urticaria-like swelling with an erythematous areola when put in superficial scarifications of a reacting skin. This substance, present not only in the body of Ascaris, but also in its secretions discharged *in vitro*, is absolutely stable against boiling. On the other hand, the volatile substances of Ascaris are unable to provoke such a skin reaction. As shown by Coventry and Taliaferro, and confirmed among others by W. Jadassohn and my collaborator Dr. Kikuth, the "Prausnitz-Kuestner reaction" is positive—that is to say, the sensitiveness is transferred with an intradermal injection of the serum from a reacting person to the injected area of the skin of a normal individual. Moreover, our experiments confirm Jadassohn's statements that the sensitizing property of this serum can be destroyed by adding a certain quantity of our thermostable Ascaris substance and that the latter becomes ineffective with the serum of a reacting person. In other words, the "antigen" and the "antibody" fix each other, and therefore, according to von Pirquet and others, the reaction is of the "allergic" type.

From the clinical point of view it will be advisable to suspect an Ascaris infection in cases of urticaria, and perhaps also in cases of asthma or other "anaphylactic symptoms," as will be discussed later. Furthermore, a Strongyloides infection is often associated with a peculiar type of urticarial eruption. In chronic infections with the parasite the skin can become so highly hypersensitive that even the extremely small quantity of "antigen" secreted by a single filariform larva can provoke an intense reaction; because, if a larva is wandering in the subcutaneous tissue of such a person, its way is marked by a quickly progressing urticarial streak. Spontaneous urticarial eruptions occur occasionally in nearly all my European cases chronically infected with Strongyloides; and these eruptions, being confined only to the buttocks and their vicinity, are of considerable diagnostic value. I think they are caused by filariform Strongyloides larvae developing in faecal particles, which even with apparent cleanliness can still adhere to the anus; it is clear that such larvae will enter the skin of these parts, which, in consequence of the repeated invasions, must become more and more "locally sensitized," as did the skin of my own forearm after many laboratory infections of my hand. The daily morning bath not being a sufficient prophylactic, washing must be repeated at least every evening; "Heliobrom-Teichgräber" mitigates the violent nocturnal itching. The constant reinfection with these larvae may contribute also to the remarkable persistency of a Strongyloides infection, lasting in one of my patients for twenty-six years; he has the honour, I think, of holding the "world record."

Although antigens provoking a more or less specific skin reaction may be present in every helminthic parasite the practical value of the method must not be overestimated. For example, we do not know how far a positive reaction to Ascaris antigen is specific in its nature; even if it were so, it would perhaps take some time for the skin of the host to become sensitized; on the other hand, the skin may stay sensitized long after the expulsion of the parasite, as shown by the Casoni reaction. Furthermore, one has to consider individual factors, and the skin of different races may not react in the same manner to helminthic antigens. It is important also in our test to take into account "group reactions." For example, the Strongyloides antigen is a very reliable diagnostic aid in chronic Strongyloides cases, and did not give a positive reaction if the person was infected only by Ascaris. On the other hand, the skin of Strongyloides carriers has reacted in my experiments not only to the Strongyloides antigen, but also to the antigen of Ascaris, and even to that of Trichinella, and of Echinococcus, although a former infection with the two latter parasites was very improbable.

At any rate, I think that at present the skin reaction has a practical value in helminthic diagnosis only for infections not easily detected in any other way. For the diagnosis of Echinococcus it is apparently superior to the complement-fixation test, and according to a recent publication of Fairley (1927) is very promising for the detection of Bilharzia; how the fallacy of the cutaneous method can be avoided in clinical use is also discussed in his valuable paper.

Instead of injecting worm extracts into the skin I prefer to introduce into a superficial scarification a trace of a powder prepared from the dried body of the parasite. This "Full-Antigen," as I call it in contrast to extracts, is very effective, can be kept for a long time, and is handy for clinical use. It may be advisable to heat the antigen powder to 100° C. to evaporate its volatile components, which are possibly associated with the "anaphylactic symptoms" that have in a few cases followed the skin reaction with Ascaris antigen.

As already discussed, the volatile substances of the Ascaris body, chemically determined so carefully by Flury, cannot provoke the skin reaction. Yet it is very difficult to understand how substances other than volatile can be involved in the frequent cases in which merely entering a laboratory where horse Ascaris has been dissected is sufficient to cause urticaria, erythema, asthma, and other anaphylactic symptoms. The same holds good, perhaps, for those cases in which the mere presence of a horse provokes

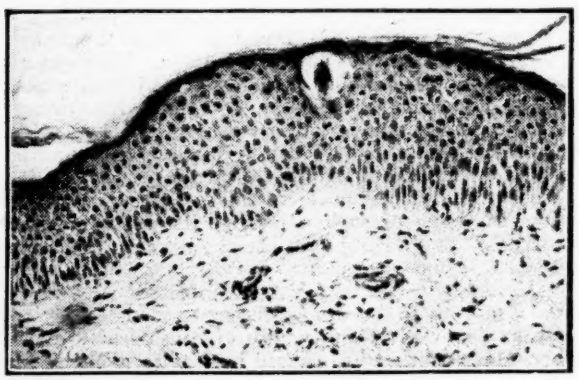


FIG. 4.—Section of skin with a larva of *Uncinaria stenocephala* under the stratum corneum. (Photograph × 150.)

such attacks. At any rate, our own experiments are not in favour of the assumption that in these cases the air may contain sprayed droplets of Ascaris fluid.

As found recently by Dr. Borchardt of our institute, some volatile aldehydes of the fatty acids (prepared in our laboratories by Dr. Oesterlin), which according to Flury are contained also in the body of Ascaris, produce in the cat a marked eosinophilia; on the other hand, the Ascaris tissue loses this faculty after boiling. We do not know if these volatile substances can provoke anaphylactic symptoms in experimental animals, but, at all events, eosinophilia is very closely associated with anaphylaxis. The erythema, urticaria, asthma, and other general symptoms, so often accompanying the perforation of the skin by the Guinea worm, and attributable, according to Fairley's classical investigations, to secretions discharged by the parasite, clinically resemble an anaphylactic shock. They, like other "allergic stages," are cut short promptly by adrenaline, as shown by Fairley. It would be interesting to try adrenaline in the Calabar swellings of *Filaria loa* infection, in which the very high eosinophilia is, I think, suggestive of an "allergic" nature. It is remarkable that the symptoms of anaphylactic shock occur not only after the rupture of an Echinococcus cyst, but, according to W. Jadassohn, even after merely touching the scratched skin with body fluid of the horse Ascaris. Further, according to Kellaway, a general narcosis not only prevents the anaphylactic shock in Echinococcus patients, but often inhibits also the development of the Casoni reaction—an observation suggesting that the skin reaction may be controlled by the nervous system. (The same seemed to be the case in our experiments in which the cutaneous reaction was negative in an area of skin previously injected with adrenaline; but the exudation involved in blister formation after a burn with hot water equally failed on such a treated area.)

The eosinophilia, so characteristic of helminthic infections, may be connected with the defence of the host against the toxic worm products, but, according to Sandground, hardly with immunity against the parasite itself. Indeed, our knowledge about such an immunity in helminthic diseases is very scanty. The fact that when many parasites of the same species are present the individual worms do not attain their usual size—as in the liver infected by many *Clonorchis sinensis*—suggests that the metabolic products of a parasite can prevent the normal development of its companions. This may be one of the reasons why in some helminthic infections hyperparasitism

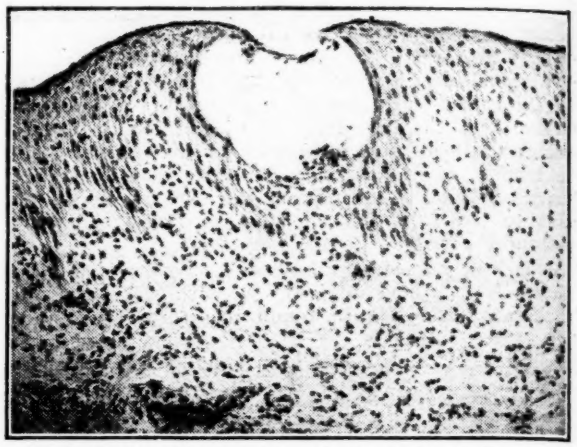


FIG. 5.—Section of the larval tract further backwards than Fig. 4 (Photograph × 150.) The pressure of the accumulating fluid has progressively enlarged the tract with flattening of the lining epithelial cells.

is possible only to a limited extent, as pointed out for *Filaria bancrofti* by Sir Patrick Manson, and found true also for *Taenia solium*, Schistosomum, and other parasites.

The immunity against hyperparasitism is comparable to a certain degree with the "*immunitas non sterilisans*" of Ehrlich, as seen in lues and other microparasitic infections; but the experiments of Gordon and Blacklock with the fly larva, *Cordylobia anthropophaga*, prove that in metazoan parasites also we have to consider an immunity persisting after the parasite's removal. The recent experiments of Sandground with *Strongyloides stercoralis* in the dog suggest that such a type of immunity can occur also in nematode infections, and I agree with Yokogawa that the very low susceptibility to *Toxocara canis* of dogs more than a year old is also a consequence of the prenatal infection of practically all our puppies, and not merely an "age resistance," as Martin has suggested in the case of swine Ascaris. But it is very difficult to exclude an "age resistance" in such cases, as is lately apparent from Herrick's experiments with hookworm larvae fed to dogs of different ages, although some of his experiments seem to indicate the presence of an "acquired immunity" in hookworm-infected dogs.

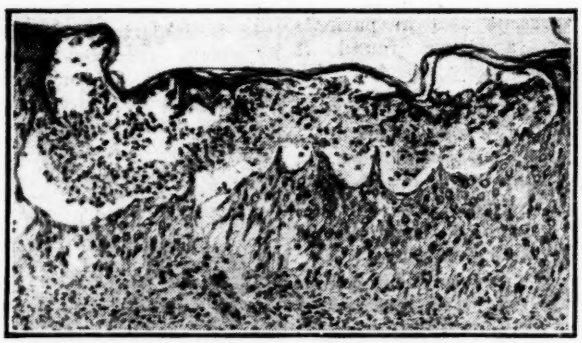


FIG. 6.—Section of another portion of the infected skin. (Photograph × 150.) Leucocytes progressing under the corneal layer; the continuity of the epithelial cells has been rent asunder by the tension of accumulating fluid.

According to Ohiro, by feeding with the parasite, immunity against *Toxocara canis* can be obtained in the dog. However, our similar experiments with *Ascaris lumbricoides* and rabbits were not conclusive, and Martin reports that his experiments with Ascaris extracts injected into pigs were negative.

The experiments of Hiraishi, who succeeded in infecting his pigs with human Ascaris only when their food did not contain vitamin A, suggests that deficient nutrition may diminish the host's natural resistance against the parasites. These findings are in accordance with recent experiments by Sollazzo in Claus Schilling's laboratory, which indicate that the natural resistance of pigeons against *Trypanosoma brucei* can be broken down by deficiency of vitamin B or by starvation. Moreover, one of my dogs, apparently immune to hookworms after repeated infections, became susceptible again when deprived of vitamin A; but, of course, such a single experiment cannot be considered conclusive.

The suggestion that the blood serum may be involved in the protection of the host against the parasite could be demonstrated neither in the case of Cordylobia immunity nor, according to Sandground, in the acquired immunity of the dog against Strongyloides; while in my own experiments the filariform Strongyloides larvae were agglomerated by normal as well as by specific serum. A "local tissue immunity" in Besredka's sense is apparently present in the skin previously infested by Cordylobia; possibly it is also found in the tissue of the intestine protecting it against parasites entering the mucosa (as Strongyloides does), and according to Holppli also feeding on its tissue (as hookworms do, or Ascaris and related forms). But the experiments of Herrick and Allen Scott, showing that a certain percentage of hookworm larvae in dogs do not even begin to feed on the tissue, but remain undeveloped for a long time in the intestine, are not in favour of this assumption. In addition, the bile secretion may have a "specific" influence, and some observations suggest that parasites can react to volatile substances. These are so highly characteristic for every species that the dog, for example, can distinguish by means of them not only the species, but actually the individual.

On the other hand, the experiments of Steiner and others with plant nematodes, and the behaviour of the various Strongyloides strains, tend to show that a parasite can adapt itself to the biochemical conditions of a new host; that such an adaptation precedes morphological changes is evident, the Ascaris of the man and the morphologically identical form in the pig being a suggestive example. But in spite of the fact that the biochemical processes of host and parasite seem to influence each other in many ways, there is so far no evidence of the production by the parasite of "antiferments" against the peptic ferments of the host. In any case, the Ascaris experiments of Weinland do not constitute such evidence, since, according to F. Einstein, Ascaris is protected against digestion by the impermeability of its cuticle.

Finally, some further remarks on hookworm epidemiology. As the "age resistance" to hookworm infection is so pronounced in dogs, one might expect the human child to be more liable than the adult. In nearly all the hookworm countries, however, the percentage of infected children is much lower than that of the adults. But the defæcation habits of primitively living people have such a decisive influence in hookworm epidemiology that the relatively low infection of the children may be merely a consequence of the use of defæcation places less contaminated with excrement (and therefore with infected larvae) than are the places frequented by the adults. As it is practically impossible to decide to what extent such habits may influence the hookworm statistics in different countries, we must be very careful in drawing general conclusions from any given material. Therefore the following deductions may, perhaps, not be conclusive.

So far as I know, apart from North Corrientes, an infection of young people higher than that of adults has been reported only from Mexico, by Carr, and from the rural population of Alabama, by Smillie and Augustine. In Alabama, however, the hookworm diminution after the fourteenth year of life is explained by the fact that shoes are used only after this age; in North Corrientes and Mexico, however, such differences between the habits of younger people and adults were not noted.

It is quite remarkable that just in North Corrientes and Mexico (where, in contrast to the other hookworm countries, the infection spontaneously decreases in the adults) the infection of the younger individuals reaches so high a degree as reported from nowhere else, a fact which suggests that the reduction of infection in the adults may be caused by an "acquired immunity" in consequence of the high and continuous infection during earlier life. Herrick points out that the epidemiological observations of Sawyer, Hill, and Dochter are also in favour of the assumption that, under the influence of a continuous hookworm infection, a certain degree of immunity against further infections is developed, especially when the former infection has been a high one. That the same seems to hold good for the hookworm-infected dog has already been noted.

The question of the varying susceptibility to hookworm infection in different races is of great economic importance. According to a very important paper by Smillie and Augustine, the negro children in Alabama are much less infected with Necator than are the children of the white farmers, and this in spite of the fact that they live practically under the same conditions. The authors suggest that since the epidermis of the negro children is thicker than that of the whites it is not so easily perforated by the hookworm larvae. The same, I think, may hold good perhaps for the skin of other coloured races. That the skin structure can influence the degree of hookworm infection is proved by the experiments of Looss and myself, which show that the tender skin of young individuals is more easily infected than is that of older persons.

Another clinical observation suggests a higher mechanical resistance of the negro epidermis against hookworm larvae than obtains in Europeans. Kirby-Smith, Dove, and White have described from Florida and its vicinity a type of "creeping eruption" clinically resembling the skin affection caused by the migration of a Gastrophilus larva. In the Florida cases, instead of a fly larva, the larva of *Ancylostoma brasiliense* of the dog was found in the epidermis. However, this species of hookworm larva may also find difficulties in boring into the negro skin, because the affection, although very common in the skin of whites, is practically absent in negroes.

About two and a half years ago the same affection developed on the forearm of an assistant and myself after some skin-penetration experiments with the larvae of the dog hookworm *Uncinaria stenocephala*. As this species is found also in European dogs, one has to consider the possibility of such skin infection in Europe. On the other hand, according to White and Dove, in contrast to *Ancylostoma brasiliense*, the larva of *Ancylostoma caninum*, so common in most countries, is not involved in "creeping eruptions." This evidently is true also of the larvae of the human species. I have studied the normal course of the affection in my own skin, and although bacterial activity cannot be excluded, of course, I think that the essential cause of the peculiar pathological changes is a toxic secretion of the larva, small as this may be.

TUBERCULOSIS IN CHILDHOOD.*

BY

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THE high incidence of tuberculosis in childhood, its characteristic forms which differentiate it so markedly from the consumption of adults, the inevitable fatal prognosis of some types and, with correct treatment, the favourable outlook of others, make the subject of considerable interest and of the utmost importance. Reference to the Registrar-General's annual report for 1926 gives ample evidence of the frequency of tuberculosis in children. In that year tuberculosis was responsible for 8.3 per cent. of the total deaths in England and Wales, whilst 14.5 per cent. of all the deaths from tuberculosis occurred in children under the age of 15.

The susceptibility to the tubercle bacillus is not spread evenly over all the years of childhood. The disease is uncommon during the first eight months of life; but thereafter the liability to infection rapidly increases, reaching its height at the age of 2 years. From then onwards the body gradually acquires a certain degree of immunity. The lack of resistance to tubercle at an early age accounts for the marked difference of the life-history of the disease in children and in adults; in the young child it rapidly assumes a generalized and fatal form, whereas phthisis, the more characteristic adult type, is rarely seen in childhood. As the child grows older the lymphatic system comes to play a more important part. The lymphatic glands act as a powerful second line of

* A paper read to the North London Medical Society, March 8th, 1929.

defence, and are usually successful in holding up the infection. This leads to the second common form of the disease, glandular tuberculosis, which is much more frequently seen in childhood than in later life, when the function of the lymphatic system tends to be superseded by the whole defensive mechanism of the body.

When the bronchial or abdominal glands become tuberculous the disease may remain latent, and if left undisturbed it may finally heal. Meanwhile, however, these infected glands are a continuous menace, and are easily rendered active by some additional infection or lowering of the resistance. The infection then no longer remains confined to the glands, but spreads to neighbouring structures or bursts into the blood stream. Even in adult life the onset of consumption can often be traced to an original latent infection during childhood.

THE PATH OF INFECTION.

Three varieties of tubercle bacilli are known—the human, the bovine, and the avian; the last of these, however, is so rarely the origin of infection that it need not concern us any further. Much has been written on the relative preponderance of human and bovine infections, but beyond indicating the nature of prophylactic measures, a differentiation is of no great practical value. Certainly there is no evidence that one is more virulent than the other. Whatever the relative proportions of the two varieties may be in tuberculous children, it has long been established that the infection is either acquired through drinking tuberculous cow's milk or through continuous close contact with an adult suffering from the disease—in other words, either by oral ingestion or by inhalation.

The exact route taken by the tubercle bacillus has been the subject of much discussion. Calmette believes that inhalation plays a small part, and that both in thoracic and in abdominal tuberculosis the bacilli enter through the mucous membrane of the throat or of the alimentary tract. This is in direct opposition to Ghon, who, by very careful microscopic examination, claims to be able to demonstrate a minute focus of tuberculosis in the lung in every case where corresponding caseous glands are found at the hilum. This minute lesion in the lung is thought to be the primary seat of invasion through inhalation. It is often so small that without a microscope it would certainly be missed, and in many cases healing has progressed so far that only a small scar remains.

Analogous primary foci of invasion are held to exist in the tonsils and the intestines, but in these situations also the lesion has become healed, or is so minute that its identification is often impossible and caseous enlargement of the glands draining these areas is the only obvious sign of tuberculosis. The disease may, in fact, spread back from such infected glands to the lungs and intestines, or ulcerate through into the general blood stream. In infancy the infection spreads easily to neighbouring organs, and is liable to take on the extremely fatal form of generalized septicaemia. In early childhood the glands become severely affected, and it is only when the barrier they form is broken down that adjacent structures are involved. Even then the disease may remain localized and recovery may follow.

Much has been done in England, by proper sterilization of milk and regular inspection of cattle, to eliminate the bovine source of infection, but the human source of infection is far more difficult to eradicate. Unless the utmost precautions are taken, a child brought up and nourished in tuberculous surroundings can hardly fail to become infected through his food, through kissing, or by inhalation of an atmosphere which must necessarily from time to time become charged with the germs.

PROPHYLAXIS.

The surest way of stamping out the disease would be to remove all children of tuberculous parents from their homes to the country during the first year of life, but as in most cases this course is impracticable we are left with less satisfactory methods of prevention, of which the following are the most important. Tuberculous mothers should not breast-feed their infants, and the greatest care must be taken in the preparation of food so as not to contaminate it with unwashed hands, or by coughing or sneezing. The child's feeding utensils must be washed and kept apart from those of the rest of the household. The infected person must only spit into a special antiseptic receptacle, and must never kiss or breathe on the child. Windows must always be kept open; the child should be in the fresh air as much as possible, and should sleep on a balcony. If possible, the whole family should move to the country. The value of oral administration of attenuated live cultures of tubercle bacilli, as advocated by Calmette, has yet to be confirmed. Grade A tuberculin-tested cow's milk is guaranteed free from tuberculous infection, but if the milk supply is suspected, scalding, boiling, or pasteurization renders it safe.

Various tests have been devised to detect the presence of tuberculosis. The most valuable is the von Pirquet test, performed by the inoculation of Koch's old tuberculin into the scarified skin. This, when a tuberculous lesion is present, produces a circumscribed red wheal in about twenty-four to forty-eight hours. The Mantoux test is more reliable, but is virtually the same as the von Pirquet, except that the solution is injected intradermally. The test depends on the hypersensitiveness of the patient, or otherwise, to tubercle bacilli or their extracts. This allergic state is best seen in the skin, where a local reaction occurs as part of the body's defensive mechanism when these specific bacterial products are injected into people who have previously been sensitized to them. A mere passing tuberculous infection is sufficient to provoke this hypersensitiveness. It follows, therefore, that nearly all adults, and many children by the age of 10, will give positive Mantoux reactions, and the value of the test as an indication of activity is seriously limited. The reaction, furthermore, is positive whether the foci of infection are active, latent, or healed, and the test is therefore of greater diagnostic value in very young children, who are less likely to have old tuberculous lesions present. An additional disadvantage is that the reaction is often negative in the final stages of generalized tuberculosis and in tuberculous meningitis.

A hard-and-fast demarcation of the various forms in which the disease is found in childhood is not always possible; for instance, the association of hilum glands and abdominal tuberculosis is not uncommon, and any form may terminate in tuberculous meningitis.

GENERALIZED TUBERCULOSIS.

Generalized tuberculosis closely resembles ordinary marasmus, and is often difficult to recognize in infants. The temperature remains normal or subnormal, and only shows an irregular pyrexia a few weeks before death. In some cases vomiting is troublesome; in others, with extensive lesions in the lungs, there is persistent cough, rapid breathing, pallor, and generally cyanosis. A mild bronchitis is the only pulmonary sign, and the spleen is generally enlarged. Death results from progressive debility, lung disease, or meningitis.

In early childhood the manifestations are equally obscure and the symptoms generalized and indefinite. Peevishness, indigestion, loss of appetite, wasting, languor, and sleeplessness are the usual complaints; but the irregular pyrexia, marked pallor, and cachectic appearance of the child soon indicate a graver illness than the first mild symptoms suggested. Later, the occurrence of severe symptoms in the lungs, brain, or abdomen often helps to clear up the diagnosis. Generalized tuberculosis can be the cause of persistent high temperature for many weeks, and the diagnosis may present difficulty until meningitis appears as a terminal event.

The presence of an enlarged spleen or the discovery of other foci of tuberculous infection, such as tuberculous epididymitis and tuberculous dactylitis, is a great help in the diagnosis of such an obscure case. The discovery of small shotty glands at the outer border of the pectoralis major muscle on each side is sometimes an indication of tuberculosis when there is no other explanation of their presence. Ophthalmoscopic examination of the fundi should never be omitted, and the discovery of choroidal tubercle may often give the final clue. All these signs are, however,

often absent, and the child may finally die without the condition having been suspected. Once tuberculosis has become generalized no treatment is of any avail, and the patient can only be kept as comfortable as possible.

THORACIC TUBERCULOSIS.

Tuberculous Bronchitis.

Repeated mild attacks of bronchitis may be the earliest signs of tuberculosis, but since, clinically, they differ in no way from ordinary bronchitis, their true significance usually passes unnoticed. It is only when the disease is anticipated by reason of the child's tuberculous surroundings, or when on rare occasions tubercle bacilli are discovered in the sputum, that active treatment can be undertaken at this early stage.

Miliary Tuberculosis of the Lung.

When the infection reaches the blood stream multiple small tuberculous foci are formed in both lungs during the process of general dissemination throughout the body. Miliary tuberculosis is invariably fatal. At first the diagnosis may prove very puzzling, and the condition be taken for influenza or bronchitis, but the increasing pallor, progressive wasting, dyspnoea, and cough eventually give the clue. Irregular pyrexia, generally higher than in bronchitis or influenza, is present, and may remain for several weeks, leading to a suspicion of typhoid fever; enlargement of the spleen further enhances this similarity. An *x*-ray film of the chest is a great help in the diagnosis, and shows a general mottling of both lungs. Symptoms of tuberculosis elsewhere in the body may supervene, and the illness often terminates in meningitis.

Tuberculous Broncho-pneumonia.

This may arise without any previous pulmonary infection, but more frequently follows a simple broncho-pneumonia, particularly in association with measles or whooping-cough. This stirs up a latent tuberculous infection harmlessly situated in a caseous bronchial gland, and causes it to spread into a neighbouring bronchus. The illness generally terminates fatally in a few weeks, but may sometimes be prolonged for several months.

Tuberculosis is suspected in a case of broncho-pneumonia which fails to clear up after several weeks, the patient meanwhile becoming progressively emaciated, paler, and more languid. Persistent rapid breathing and irregular or continued pyrexia are additional indications. Temporary improvement is sometimes a striking feature, and may give rise to false hopes of recovery. Involvement of the pleura is common, and loculated serous effusions or small empyemata are formed. Examination of such pleural effusions may occasionally reveal the presence of tubercle bacilli, and these must also be sought for in the sputum. Children seldom expectorate, but sputum can often be obtained by touching the back of the throat with a piece of gauze wrapped round the end of a pair of forceps. A reflex cough is excited and the sputum is caught on the swab. Should these two examinations prove fruitless the search may be directed to the stools, or to a stomach wash-out for any tubercle bacilli that may have been swallowed. The discovery of chronic tuberculous lesions elsewhere may prove useful. The presence of opaque fluffy shadows in an *x*-ray picture of the lungs gives the deciding evidence. At times all methods of examination are inconclusive; the true nature of a persistent broncho-pneumonia with splenic enlargement, continued pyrexia, and progressive emaciation is then left in doubt, since the condition is quite compatible with either tuberculous or pneumococcal infection.

No treatment is likely to meet with success, but, in older children, in the rare event of the lesion being confined to one side, collapse of the affected lung by artificial pneumothorax may occasionally arrest the disease.

Pulmonary Phthisis.

Chronic consumption of the adult type is rare in children, and when it occurs the cavities often do not follow the same distribution as in adults, being principally situated near the hilum or at the base of the lungs. Haemoptysis is a rare event in an advanced stage of the disease, when tubercle bacilli may also be present in the sputum. A diagnosis of phthisis is undoubtedly too frequently made in children, areas of pulmonary fibrosis and unresolved pneumonia at a lung apex being wrongly interpreted as tuberculous. Such common symptoms of chronic indigestion as wasting, sweating, and evening rise of temperature may also cause confusion. Haemoptysis in childhood should never suggest tuberculosis. It is usually associated with adenoids or is a sign of advanced heart disease.

Tuberculosis of the Bronchial Glands.

The bronchial glands are more often the site of chronic tuberculous disease in childhood than any other region of the body. Children thus affected are not very ill, but are nevertheless potentially tuberculous. Minor maladies or debilitating diseases easily awaken this dormant tuberculous infection. It spreads back into the lungs, giving rise to serious consequences. The caseous contents of the glands may even burst directly into a bronchus or pass into the blood stream.

Such symptoms as arise from quiescent tuberculous bronchial glands are vague and indefinite. The child has a poor appetite and does not gain weight; his general development suffers, he loses his vigour, and becomes easily tired. The temperature is constantly a few degrees above normal and periodically may be considerably raised. There is a hoarse irritating cough, which is often paroxysmal in character and somewhat reminiscent of whooping-cough. It may, in fact, follow this infection without interruption, and the persistence of a spasmodic cough long after the whoop has disappeared points to the possible complication of enlarged bronchial glands. The glands may become so large in infants that their pressure on the trachea actually embarrasses the breathing, producing snuffles or stridor.

Several physical signs are said to be diagnostic of mediastinal glands, but in my experience they are all untrustworthy. It is true that submanubrial and paravertebral dullness may be present, but the glands need to be very large before either of these signs is elicited. D'Espine's sign and Eustace Smith's sign are of no great value since they can often be elicited in normal children. In every case a radiogram must be made, but even that will not show whether the glandular enlargement is due to tuberculous or to some simple catarrhal infection.

Prognosis and Treatment.

Immediately the condition is suspected and has been confirmed by *x*-ray examination and a positive Mantoux test, the child must be sent to the country or seaside, where he should remain continuously in the open air. Sun baths or irradiation with ultra-violet light, a nourishing diet, and tonics are also important items in the treatment. This must be continued until all symptoms have disappeared, the normal weight is restored, and the temperature remains normal. Septic tonsils require removal when the general condition has improved. Deep *x*-ray therapy in the hands of experts is sometimes strikingly successful in cases which are slow in reacting to other lines of treatment.

ABDOMINAL TUBERCULOSIS.

Tuberculosis confined to the abdomen is one of the commonest forms in children and is the most amenable to treatment. The infection is generally bovine through contaminated milk, and reaches the abdomen and mesenteric glands through the intestines. Several clinical varieties exist, and can be enumerated as follows.

1. *Tuberculous Ascites.*—The peritoneum and mesenteric glands are both infected with tubercle, which produces a gradually increased accumulation of fluid in the abdominal cavity. This may lie free in the abdomen or be loculated by the presence of adhesions.

2. *Tabes Mesenterica.*—The infection is confined to the abdominal glands, which become caseous or calcified. They may give rise to symptoms, or remain quiescent and be found unexpectedly at operation or post mortem.

3. *Adhesive Peritonitis.*—In this condition there is little or no free fluid present. Matting of the mesentery and omentum occurs, and adhesions are formed between the coils of intestines.

4. *Tuberculous Ulceration of the Bowels.*—This is generally secondary to pulmonary disease, resulting from the swallowing of infected sputum. In children it can occur as a primary infection, and is then usually associated with severe involvement of the mesenteric glands. In either case diarrhoea is the most striking symptom.

5. *Intestinal Obstruction.*—This may result from ulceration of bowel, or from kinking and narrowing of its lumen through peritoneal adhesions.

6. *Acute Peritonitis.*—This is simulated occasionally when an intestinal ulcer perforates into the surrounding adhesions, or when a tuberculous gland breaks down completely or becomes infected with other organisms.

Clinical Manifestations.

The symptoms depend largely on the part first and most severely affected, but generally they are gradual and insidious. The child's strength is noticed to be failing; he is pale and thin, feverish at night, and the abdomen is progressively enlarging. The appetite is capricious, the stools are often unhealthy, and there may be alternating constipation and diarrhoea. Attacks of colic are not uncommon, and when associated with vomiting may be mistaken for subacute appendicitis. In those cases which simulate acute peritonitis the onset of symptoms is very abrupt, with high temperature, vomiting, acute abdominal pain, and generalized tenderness and rigidity. When the acute inflammation is principally confined to the ileo-caecal glands, this tenderness and rigidity is localized to the right iliac fossa, and the condition closely resembles acute appendicitis. The adhesive type may so constrict the intestines and interfere with their normal movements that partial obstruction results; the intestinal coils stand out in relief under the abdominal wall, and peristalsis may be seen. In certain mild cases there are repeated feverish attacks at intervals of a few months, and little else is noticed at the time except slight abdominal distension. Enlarged glands or tuberculous masses, sometimes mistaken for the liver, can usually be felt in the abdomen at some period of the disease, but these may be masked by the presence of ascites. When suppuration occurs the abscess always tends to point at the umbilicus.

The outlook is certainly favourable in the absence of any severe tuberculosis elsewhere, and patients who have received prompt and energetic treatment recover completely. No case should be despaired of, since the disease rarely proves fatal, and then only in very feeble children. The infection is more dangerous in infants, in whom it is apt to spread beyond the abdomen.

Treatment.

The patients must live in the open air day and night, and remain flat in bed so long as ascites continues, the temperature is raised, or there are any other symptoms present. The general resistance is increased by giving as much nourishment as possible without upsetting the digestion. Milk, cream, eggs, butter, plasmon, raw meat juice, and raw meat sandwiches should all be included in the diet; but if they are not tolerated, and cause flatulence and curdled stools, fats must be restricted and milk may require peptonizing. Starchy foods are contraindicated, and if the appetite is poor or the digestion weak, alcohol in the form of brandy or brandy egg-flip should be given. Cod-liver oil is valuable, but cannot be added to the diet unless the stools are normal and there is no diarrhoea.

A belladonna and glycerin liniment (1 to 4) applied to the abdomen on lint is helpful in easing pain. Various applications are also said to be useful in the treatment of the actual disease, but, with the possible exception of iodoform ointment (10 per cent.) and mercury ointment (*B.P.* strength), they are of little value.

Irradiation of the abdomen by natural sunlight or ultra-violet rays is undoubtedly beneficial. If the ascites continues to increase, its removal may become necessary by means of a small trocar and cannula or Southey's tubes; but the best method of drainage is through a fairly long incision under general anaesthesia. Surgical removal of tuberculous abdominal glands is an unsuccessful procedure when there are any considerable number, and in adhesive tuberculous peritonitis surgery is positively dangerous and liable to liberate the contents of the bowel into the abdominal cavity. It is equally unwise to interfere with a tuberculous abscess until it is actually on the point of bursting through the umbilicus.

Tuberculosis of the Ear.

Chronic discharge from the ear in children is more commonly due to tuberculous infections than is usually supposed. Any aural discharge in a suspected case of tuberculosis should be examined, since the chance discovery of tubercle bacilli may just give the required confirmatory evidence. There are few subjective symptoms, and the ear continues to discharge profusely, despite ordinary methods of treatment. The lymphatic glands in the vicinity of the mastoid soon become infected and finally break down. In addition, there may be facial palsy as a result of involvement of the facial nerve as it passes through the middle ear. In the treatment efforts are made to eradicate the disease completely by surgical means, but this is often unsuccessful and the outlook is generally unfavourable.

Tuberculous Meningitis.

No disease in the whole of paediatrics can appear in so many unexpected ways as tuberculous meningitis and lead to such confusion. The illness has no classical picture, and such physical signs as do appear often arise so late that they give no help towards an early diagnosis. Little reliance should be placed on Koenig's sign, as it is very inconstant and its absence in no way precludes the presence of tuberculous meningitis. Severe headache, persistent vomiting, prolonged pyrexia, gradual change of temperament, drowsiness, or a sudden fit followed by unconsciousness are all possible modes of onset. Should any of these occur after infancy and have no other explanation, tuberculous meningitis should always be borne in mind. Two physical signs that I have found most useful in a doubtful case are enlargement of the spleen and a unilateral extensor response. The ultimate diagnosis will, however, depend upon examination of the cerebro-spinal fluid, and, once established, the prognosis is invariably fatal.

Conclusion.

Let me emphasize once again the importance of prophylaxis. The prevention of contact with human sources of infection, the proper sterilization of milk, the maintenance of a high standard of general bodily health, and the provision of adequate country or seaside convalescence after any severe infection are the best safeguards we can give a child against tuberculosis.

CERTAIN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF DIABETES.*

BY

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In the past the identification of a reducing substance in the urine sufficed for the diagnosis of diabetes. Varying degrees of severity were recognized, but anyone presenting a urine which reduced Fehling's solution was regarded as suffering from diabetes of greater or lesser severity. That parturient women and nursing mothers frequently showed sugar in the urine was early recognized, but it was some time before it was realized that this sugar was lactose and that its presence lacked any particular significance. Later it was discovered that the urine of certain persons otherwise in normal health contained pentose, which reduces Fehling's solution in the same manner as glucose. For the diagnosis of diabetes it was then deemed only necessary to demonstrate that the reducing substance in the urine was neither lactose nor pentose, the former being readily excluded by the yeast fermentation test with which it gives a negative result, the latter by Bial's reaction;

* A paper read before the South Staffordshire Division of the British Medical Association at Walsall on March 21st, 1929.

The diagnosis of diabetes thus came to depend upon the demonstration of glucose in the urine. All patients consistently showing glucose in the urine on an ordinary diet were regarded as diabetics.

Types of Blood Sugar Curve.

It was long ago shown that the glycosuria of diabetes is dependent upon the presence of an unusually high percentage of sugar in the blood; in the absence of any easy means of examining the blood sugar level, however, it was not possible to apply this knowledge to the differentiation of the various types of glycosuria. With the invention of quick and simple means for measuring the blood sugar, such as those devised by MacLean, Folin, Benedict, and many others, it became feasible to estimate the blood sugar clinically, and it then became apparent that the percentage of sugar in the blood is subject to fluctuations according to the stage of digestion. In normal persons the blood sugar between three and four hours after a meal falls to a level of somewhere between 80 and 120 mg. per cent., which may be known as the fasting level. On the ingestion of food, particularly of starchy food, it rises rapidly to from 180 to 200 mg. per cent., and then falls rapidly again, reaching the original fasting level in between one and a half and two and a half hours.

In diabetics the behaviour of the blood sugar is quite different. In the first place, even after a prolonged fast, the level is usually much above the normal fasting level. On the ingestion of food it rises rapidly to a level far above that ever attained in normal persons, and stays up. It is this persistence of a high blood sugar after the ingestion of food which characterizes the diabetic—in other words, it is the shape and not the height attained by the blood sugar curve which is diagnostic of diabetes. In partially treated cases the fasting level of the blood sugar may be normal, and even after the ingestion of glucose it may rise only just above the level to be expected in a normal person; but having risen, there it stays, thus making clear the diagnosis of diabetes.

The blood sugar in normal persons can hardly be made to rise above from 180 to 200 mg. per cent. If it be induced to do so sugar is excreted in the urine. The blood sugar level at which sugar is excreted in the urine is known as the "renal threshold" for glucose. In some persons otherwise quite normal this renal threshold may be lower than usual, their condition, which is without clinical significance, being usually known as "leaky kidney" or "renal glycosuria." Yet another type of glycosuria which must be distinguished from true diabetes is found in some persons in whom, after the ingestion of sugar, the blood sugar rises steeply to an abnormal level, but thereafter falls to the fasting level in the normal time. This is a comparatively rare condition, and its significance is obscure; in view of the fact, however, that persons in whom it is found often pass acetone in the urine it would seem to indicate a definite disturbance in carbohydrate metabolism and to demand a careful observation of the patient.

It is obvious, then, that the mere presence of sugar in the urine cannot be looked upon as establishing a diagnosis of diabetes. An examination of the fasting blood sugar, taken from three to four hours after the last meal, is also necessary. If this shows a high blood sugar the diagnosis is more or less complete; if the blood sugar is at, or not much above, the normal level, a glucose tolerance estimation and a blood sugar curve can hardly fail to establish the diagnosis one way or the other. Further evidence must be sought in the presence or absence of the ketone bodies, acetone and diacetic acid. Their presence along with sugar is strongly indicative of the existence of true diabetes; in their absence diabetes, even if present, is probably of a mild type. The presence of acetone in large amount is a danger signal; the presence of diacetic acid in any amount is a call for instant and vigorous treatment.

Problems in the Treatment of Diabetes.

Everyone who has seen more than one case must recognize that diabetes varies enormously in severity. It is a commonplace that it is severe in the young and that the later in life it develops the more benign it becomes. The presence or absence of the ketone bodies serves as some indication of severity or benignity. Much information can also be derived from the appearance of the patient. The young or middle-aged patient, showing a dirty tongue, complaining of polyuria and thirst, and showing signs of recent loss of weight, is obviously in a more dangerous state than the elderly, apple-faced, and obese individual, boasting of a hearty appetite, and in whose urine sugar has been discovered by chance only. In the former class the indications for immediate and vigorous treatment are obvious; in the latter it must be decided how far one is justified in meddling with a regime upon which the patient feels perfectly well. The existence of pruritus, neuritis, or ocular or cardiac trouble of any sort is a distinct indication for treatment; if, in the absence of these conditions, patients choose to go their own way, they should always be warned of the danger of gangrene.

Treatment of diabetes has practically only one object in view—namely, to reduce the work of the islet cells of the pancreas to a level with which they can cope. The islet cells seem to be peculiar among the cells of the body in that they are only just up to their work. The amount of overloading which they will sustain without collapse is limited. In these latter years it has become the custom to sing the praises of a carbohydrate diet and to attribute all sorts of ills to the proteins, especially to those of "red" meat. In America, where food fads flourish to an extent even greater than in this country, and where the inhabitants are in the habit of stoking up, especially at breakfast, on farinaceous foods of all sorts, diabetes is rapidly on the increase; its heavy incidence among the rice and sweetmeat-eating Bengalis is well known. My own observations would lead me to believe that it is also on the increase in this country, a fact which may be correlated with the demand, attested by the butchers throughout the land, for smaller joints.

How readily a normal pancreas will collapse it is difficult to say; many diabetics show a history of diabetes in the family; in others the onset may follow on an acute illness; in many cases no predisposing cause is to be found. Such sporadic cases are usually severe, and may be due, as suggested by Cammidge, to the inheritance of the diabetic tendency as a recessive, in which case a family history would be difficult to obtain.

In children, no matter how it occurs, the condition is always dangerous and difficult to treat; in young adults surprisingly good results may be obtained once the load is removed from the pancreas by means of insulin and diet. In all cases except the mildest, such as occur in the elderly, it is advisable to have recourse to insulin early in treatment, but in many cases in youngish persons the islet cells of the pancreas may regain their powers to such an extent that the dose of insulin may later be progressively reduced and sometimes dispensed with altogether.

Only recently diet was our sheet anchor in the treatment of diabetes; it still remains a vastly important factor, but we are coming to rely more and more upon insulin, even in mild cases. Until lately it was my custom to fast patients until they were sugar-free, and then to try to build up a diet on which they would remain free without the use of insulin. If possible I liked to send them out on diet alone. My present procedure is still much the same, but I no longer hesitate to use insulin early if there is the slightest difficulty about building up a suitable diet without it. In the case of patients who do not baulk at the thought of insulin, which most do until they have had experience of it, I encourage its use even if their case can be controlled without it, as by its use a greater laxity of diet becomes permissible, with a corresponding increase in the comfort of the patient.

The Administration of Insulin.

Patients should always be taught to administer their own insulin, or, at any rate, to have it administered by someone, be it nurse or relative, constantly about their persons. To this rule there is no exception. Insulin must be given within twenty minutes of the commencement of a meal, and always before the same meals. It is impossible for a practitioner to attend his diabetic patients once or twice daily always in the same relationship to meals, and the custom of administering a dose at any odd time during the

day cannot be too strongly condemned. Once the ice has been broken patients usually administer their own insulin without trouble. For both men and women the abdominal wall makes an admirable site for the before breakfast dose; men usually prefer to give doses during the day into the leg below the knee, while women usually select the thigh. In all these sites it is possible to steady the skin with one hand and to give the injection with the other. Patients should be instructed to keep their syringes in spirit and to wash them out with tap water before and after use. This latter point is of importance, as traces of spirit in the syringe will irritate the skin and may even cause ulceration. An intelligent patient can arrange matters so that the administration of insulin even three times daily makes but little difference to the enjoyment of life; there are many such who lead active lives at business or participate vigorously in sports, both in spite and because of three doses of insulin daily.

In all but the simplest cases the determination of the suitable insulin dosage is a matter of some difficulty, and cannot be made without careful watching of the patient. On the whole it may be said that it is better to give too much than too little; hypoglycaemia is something of a bugbear, and the symptoms should be explained to the patient, who should be warned to carry a few lumps of sugar at all times, and to suck a lump if troubled by feelings of giddiness. I have seen two patients rendered unconscious by hypoglycaemia; one of them received 80 units of insulin on the assumption that the condition was coma, but both made perfect recoveries and suffered no ill effects. Most cases of hypoglycaemia will respond readily to a hypodermic injection of 1 c.cm. of adrenaline followed by sugar by the mouth as consciousness returns. It is seldom, if ever, necessary to give sugar intravenously in such cases. Mild hypoglycaemia symptoms are common in patients on a sufficient insulin dosage, but usually pass off without treatment. In its mildest form hypoglycaemia is shown by flushing of the face, giddiness, and a feeling of light-headedness. As it proceeds there may be inco-ordination and incoherence of speech, and later unconsciousness.

From time to time cases may be met with which prove resistant to insulin. This resistance may be of a high degree, so that even with large doses it may be difficult or even impossible to keep down the blood sugar level. Such a condition developing in an elderly diabetic without apparent cause is usually an indication of the development of some constitutional disorder such as cancer or tuberculosis; it may occur acutely in diabetics suffering from severe infections such as erysipelas, or it may occur from no apparent cause in diabetics who have apparently been doing well for some time. In one such case at necropsy I found such islets as remained in the pancreas engorged to the point of destruction with blood—an apparent apoplexy of the islets. In all such cases the outlook is grave in the extreme. Other milder cases may show a fluctuating response to insulin, so that with the patient on a fixed diet the same dose of insulin may at one time fail to control the blood sugar, and at another may produce hypoglycaemia. Such a condition usually indicates the presence of a focus of active sepsis, and is an indication for a careful examination of such possible sites as the tonsils, teeth, accessory sinuses, appendix, and gall-bladder. Eradication of the focus of sepsis has the happiest results.

Diabetic Coma.

The menace of coma perpetually hangs over the head of the diabetic patient and of his doctor. Apart, however, from the cases referred to above, which for some reason or other become insulin-resistant, it may be said that the onset of coma is indicative of gross carelessness either on the part of the patient or the doctor. So far as subjective symptoms are concerned it may fall on the patient with as little warning as a thunderbolt, but acetone will have been present in the breath and ketone bodies in the urine for weeks beforehand. Cases have been reported in which there was no acetonuria, but it is difficult to believe that the coma was diabetic. Coma is unusual in patients who are taking anything like a sufficient insulin dosage, but it may occur when the dose in insufficient, and in these circumstances there is always some doubt as to whether the unconsciousness is due to diabetes or to insulin hypoglycaemia. The presence of sugar and ketone bodies in the urine is strong evidence in favour of coma. A high blood sugar in conjunction with ketone bodies in the urine makes the diagnosis to all intents and purposes certain. Where means of investigating the blood sugar and urine are not available it is possible to make a fairly certain diagnosis on the history and the clinical appearance. Patients in advanced hypoglycaemia show a moist skin, flushed face, and a bounding pulse; their respiration is deep, but not stertorous. Patients in coma show a dry skin, a pale face, and a weak pulse; in the later stages their respiration is usually stertorous, and the Babinski reflex may be plantar in type. In addition, for those who can smell it, there is the odour of acetone—the odour of sanctity of the hagiologists. The management of coma demands constant care and attention. The enemies to be combated are hypoglycaemia, acetonaemia, and heart failure. Insulin is the first requisite, and should be given at once in a dose of from 80 to 100 units. It is my custom to combine it with sugar by the mouth with a view to combating the acetonaemia. Since there is already excess of sugar in the blood this may seem irrational, but it works well in practice. It was formerly our custom to treat coma with large doses of sodium bicarbonate given by the mouth. In a small series of cases treated with and without the alkali at the Royal Hospital we found, however, that those not given the bicarbonate did best; and in view of this and of certain experimental evidence that excess of alkali interferes with the metabolism of carbohydrate, we have discontinued its use in large doses. In cases in which, as often occurs, the blood is thick and viscous, intravenous injection of saline is indicated. There is some evidence that in coma there is a diminution of the chlorides in the blood, and having this in mind, and with a view to bringing about a dilution of the blood by osmosis from the tissues, we have lately been trying the effect of the injection of a solution containing 2 per cent. sodium chloride and 5 per cent. sodium bicarbonate. It is too early yet to report on this measure.

After the initial dose of insulin further doses must be controlled by the blood sugar; usually a further 40 units or so is required within about two hours, and thereafter no more than 10 units hourly. I have found no benefit in the administration of the immense doses advocated by some authors. Next to giving insulin the most important step is to get the bowels open, and to this end enemata should be continued until a good result has been obtained. The state of the heart will demand attention, and in most cases the hypodermic injection of camphor in oil will be indicated early in the course of the condition. The patient must be kept warm with hot-water bottles, and large amounts of fluid, preferably water, must be administered—if possible by the mouth, but otherwise by the rectum or subcutaneously.

By these means it will be possible in most cases of coma except in those dependent upon the existence of some acute infection, to reduce the blood sugar to normal and to free the urine from acetone. Even when this result has been brought about, however, the issue may be fatal; cases occur in which unconsciousness persists and death results in spite of a normal blood sugar and a urine free of acetone. The diabetic once in coma cannot be regarded as out of the wood until he has been conscious for several days and showing a normal blood sugar and urine. I have known patients admitted to hospital in coma to relapse twice, the second time fatally.

Diabetes Complicated by Sepsis.

The existence of any septic condition, whether it be an acute infection, a carbuncle, or a limb affected by "wet" gangrene, complicates the management of a diabetic case and facilitates the onset of coma. In such cases it is of primary importance to get the urine free of acetone and to keep it so. To this end there must be no restriction of the carbohydrate in the diet; a liberal amount must be taken and balanced by sufficient doses of insulin. It is usually desirable for the patient to take between 80 and 100 grams of carbohydrate daily, the form being immaterial. In very severe infections glucose water or fruit juice may be the most convenient form; Benger's food is usually

tolerated, and in milder conditions the bulk of the carbohydrate may be taken as bread. The following skeleton diet, which may be modified to suit the particular case, is in use at the Royal Hospital.

Meat, fish, poultry, eggs, clear soup, bovril, broth, cabbage, cauliflower, lettuce, endive, tomato, grape fruit, asparagus, mushrooms, sea-kale, cucumber, chicory, spinach, celery (*as desired*).
Tea, coffee, and unsweetened lemon juice in water (*as desired*).

Compulsory Ration.

Benger's food made with milk ..... half pints during the day.
..... units of insulin are to be taken before each half-pint of Benger's food.
Bread: ..... ounces during the day, with meals. Butter as desired.
(If specially ordered) *Jam or preserve*—half an ounce with bread, at a meal.
A further ..... units of insulin is to be taken before ..... of the daily meals, one of which must be the one at which the jam is taken (if ordered).
Total daily insulin dosage ..... units.
Carbohydrate approximately ..... grams.

CARE OF DIABETICS BEFORE AND AFTER OPERATION.

In operations upon diabetic patients it is a matter of the utmost importance to avoid ketosis. For a clean operation, such as an interval appendix or radical cure of a hernia in a well-controlled diabetic, few special precautions are necessary. Where, however, there is sepsis, as in the case of amputation of an extremity for wet gangrene or the excision of a carbuncle, it is well, if possible, to delay the operation until the diabetes has to some extent been controlled. The following procedure, subject of course to modification to suit the individual case, is the routine at the Royal Hospital.

1. Three days prior to operation increase the carbohydrate content of the diet to at least 100 grams.
2. Operate early in day.
3. Three hours before operation give carbohydrate content of usual breakfast *plus* 10 grams of glucose. Give usual morning insulin at same time.
4. Simple enema one and a half hours before operation.
5. Immediately before operation give 10 to 20 units of insulin.
6. On returning to ward give 30 to 40 grams of glucose as 10 per cent. solution in saline, rectally, with 20 to 30 units of insulin.
7. Two hours after operation take blood specimen and give glucose or insulin according to result.

The diet in early days after operation should be liquid and soft, and should largely consist of carbohydrate until the temperature is normal and manifestations of toxaemia have disappeared. The total calories should not exceed maintenance diet during the period of active healing.

In conclusion, I would insist that the successful treatment of diabetes demands the whole-hearted co-operation of the patient. He must have an intelligent appreciation of the condition from which he is suffering, and time spent in explaining this to him is time well spent by his medical attendant.

COLLES'S FRACTURE:

AN EFFICIENT AND ECONOMICAL METHOD OF SPLINTING.

BY

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THE cost of after-care (massage, physiotherapy, and electrotherapy) in the treatment of fractures has been mounting up in recent years to an alarming extent. The time has come for the surgeon who prescribes this treatment—often as a matter of routine—to consider whether this expense is justified, or whether equally good, or even better, results might not be obtained by well-considered splinting.

Efficient splinting should ensure complete immobilization of the fragments after reduction, and, in the case of the Colles's fracture, fixation of the hand in such a position that the patient is able to use it as soon as the damage to the soft tissues begins to subside. Jones's and Carr's splints are the two most commonly used. The former provides the more perfect fixation of the fragments; the latter the better position from which to start re-education. I find that the best features of both splints can be combined in a carefully applied plaster case.

The treatment of a Colles's fracture may be divided into three stages: (*a*) reduction of the fracture; (*b*) splinting; (*c*) after-care.

A. *Reduction of the Fracture.*

Reduction of the fracture under an anaesthetic can generally be easily obtained by steady traction on the hand and manipulation of the fragments into position by the thumb and forefinger. If more force is required the well-known manipulation of Sir Robert Jones provides all that is necessary; but as little force should be used as possible. Complete reduction is indicated by the restoration of the radial curve, as described by Sir Robert Jones, and of the correct relationship of the styloid processes.

B. *Splinting.*

A roll of stockinette is run up the arm, extending from the knuckles to the elbow. Over this a light plaster case is applied. With the thumb and forefinger of one hand the surgeon holds the fragments of the radius in the corrected position, and with the other hand holds the wrist in about 15 degrees of dorsiflexion and slight ulnar deviation while the plaster sets. It is essential that the plaster should be closely moulded to the dorsum of the wrist and that the angle of dorsiflexion should be exactly opposite the joint. To prevent rubbing the skin, the plaster should extend, glove fashion, half-way up the metacarpals, and should allow full palmar flexion of the metacarpo-phalangeal joints. (Figs. 1 and 2.)

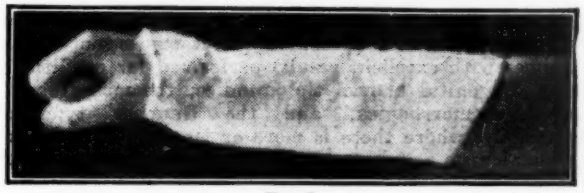


FIG. 1.

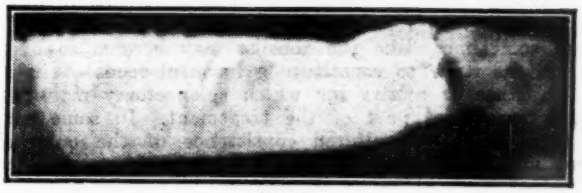


FIG. 2.

FIG. 3.—Showing strip cut from plaster.

The occurrence of pain and swelling of the fingers may be avoided by cutting out from the back of the plaster, before it sets, and from the underlying stockinette, a strip about half an inch wide, leaving a bridge at the top and the bottom (Fig. 3). A radiogram to confirm the correction should be taken through the plaster.

C. *After-care.*

As soon as he recovers from the anaesthetic the patient is encouraged to use his fingers and gradually to develop the use of his hand. In a week or ten days he is able to do anything within the limits imposed by a cock-up splint. The plaster case is removed at the end of a month, by which time bony union has generally taken place, and as

the patient has already been using his hand freely for two or three weeks no further treatment is required.

I have been treating Colles's fractures by this method for the past three or four years with uniformly good results and with considerable saving in the cost of treatment.

HYPERSPLENISM AND HYPOSPLENISM AND SPLENECTOMY.

BY

F. PARKES WEBER, M.D., F.R.C.P.

APART from the results of traumatism and the exceedingly rare primary malignant neoplasms and some of the primary (or "predominant") tuberculous and other chronic infectious (parasitic) conditions of the spleen, the indications and counterindications for splenectomy will doubtless be more definitely formulated when more is known about the various functions of the organ in question. In regard to the functional activity of the spleen it will probably become more and more convenient to speak of "hypersplenism" and "hyposplenism"—by analogy with the terms "hyperthyroidism" and "hypothyroidism," "hyperpituitarism" and "hypopituitarism." It will probably also be found that there are various forms of hypersplenism and hyposplenism corresponding to involvement of the various functions of the spleen (and reticulo-endothelial system), apart from the now well-recognized function of the spleen as a blood reservoir (Barcroft, etc.).

In cases of harmful (not compensatory) hypersplenism splenectomy or some effective depressor of splenic function (radium, x rays, and other as yet undiscovered means) will be indicated. At present splenectomy is not rarely (sometimes with excellent result) performed for conditions, such as congenital haemolytic jaundice, thrombocytopenic purpura haemorrhagica, and the Gaucher type of splenomegaly, where there is more or less clinical evidence of hypersplenism. For cases of hyposplenism some effective activator of the spleen and reticulo-endothelial system will have to be searched out.

In regard to splenic infections it should be remembered that, though one of the functions of the spleen, as of the tonsils, is to resist and "hold up" infections, the spleen sometimes, like the tonsils, may become so overwhelmed as itself to constitute a harmful focus of infection—a state of affairs for which splenectomy may constitute a rational part of the treatment. In some such cases the bulk and altered consistence of the enlarged spleen may themselves become a source of danger for the individual (possibility of rupture from relatively slight traumata).

Under infectious and parasitic splenomegalies, besides the relatively transitory enlargements due to the ordinary acute febrile infections, one would place the more chronic ones due to malaria, syphilis, tuberculosis, hydatid cysts, kala-azar, schistosomiasis (one form of "Egyptian splenomegaly"), the problematic splenic "mycoses," and perhaps certain other cases that have been clinically labelled as "Banti's disease."

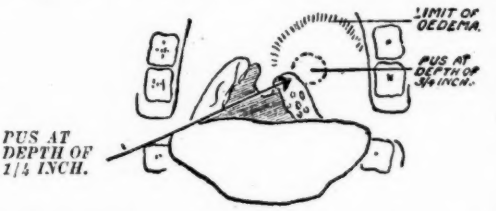
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE ANATOMICAL METHOD OF OPENING QUINSY.

NOT everyone has been satisfied with the old method of opening quinsy by cutting into the soft palate. The oedema present often makes it difficult to find the pus, and more than one cut may be necessary. On the other hand, immediate enucleation is so drastic a form of treatment as to appear unnecessary as well as risky. Both of these extremes can be avoided by opening the abscess in the right way.

A quinsy is a collection of pus in the supratonsillar fossa. It forms because of inflammatory adhesions at the normal orifice of the fossa. As pus accumulates the palate bulges and is further swollen by oedema. In order to evacuate the pus it is only necessary to break down the adhesions by introducing a pair of sinus forceps with closed blades into the supratonsillar fossa in the direction shown by the arrow in the diagram. The point of insertion is immediately



under the arch formed by the anterior and posterior faucial pillars on the same side. A slight push is needed. As soon as they have penetrated the abscess the blades are widely opened, the adhesions are broken down, and pus pours out.

There are many advantages in this method:

1. It is simple, certain, easy, and only one instrument is required.
2. Trismus is no obstacle.
3. There is no pain beyond pressure from the forceps points.
4. There is hardly any bleeding because nothing is cut.
5. The abscess is freely drained by its natural outlet.
6. The tonsils can be enucleated without risk at a later date.
7. There is no unnecessary mutilation of mobile parts.
8. No anaesthetic is necessary, either local or general.

London, W. H. MORTIMER WHARRY, F.R.C.S.

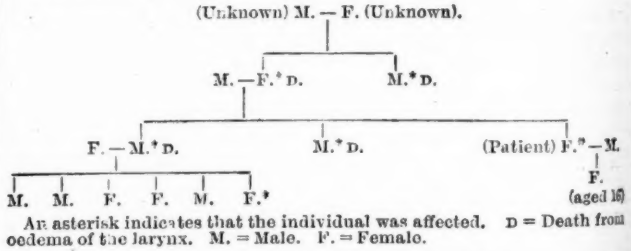
HEREDITARY ANGIO-NEUROTIC OEDEMA.

THAT heredity plays an important part in the causation of Quincke's disease is well established, and numerous authors have reported genealogies. The hereditary form would seem to be of a much more severe type than the comparatively common acquired cases, and this is illustrated by the cases of Griffith,[1] where both father and daughter died of acute oedema of the larynx. J. R. and T. R. Crowder[2] report five generations of a family, and of 63 known descendants 27 inherited it; of these, 14 died as a direct result. Although a number of cases are on record, the hereditary form would appear to be of sufficient rarity in the individual experience to justify a case report.

A woman, aged 55, was referred to me on account of angio-neurotic oedema of lifelong duration; the disease was of the cutaneous type, and there was a complete absence of any of the puzzling attacks of abdominal colic due to intestinal oedema. The attacks occurred every two or three weeks, and the reason that advice was sought was the alarming increase in severity and frequency of the laryngeal involvement; the areas of oedema were peculiar in the absence of itching. Physical examination revealed little apart from a slight degree of dermatographism—much less than is usually seen in the common variety of case.

The patient was considerably apprehensive as to the outcome of the disease, as her mother and her only two brothers died of it; in an effort to avert the family tragedy the patient was desensitized by a course of peptone in small doses, and she was instructed to ingest half a grain of ephedrine sulphate at the first warning of an attack. Up to the time of writing the results have been most happy.

The following is the genealogical tree.



An asterisk indicates that the individual was affected. D = Death from oedema of the larynx. M. = Male. F. = Female.

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[1] Griffith: *British Medical Journal*, 1902, i, 1470.
[2] Crowder, J. R. and T. R.: *Arch. Int. Med.*, 1917, 20, 840.

Reports of Societies.

DISSEMINATED ENCEPHALO-MYELITIS.

AT a meeting of the Section of Neurology of the Royal Society of Medicine, on April 11th, the subject of disseminated encephalo-myelitis was discussed, with Mr. DONALD ARMOUR in the chair.

Dr. W. J. ADIE said that the incidence of acute disseminated encephalo-myelitis had recently assumed almost epidemic proportions. He gave an account of the clinical features of the diffuse and disseminated forms, and suggested a number of questions for discussion, in particular as to the relation of acute disseminated encephalo-myelitis to disseminated sclerosis. Was disseminated sclerosis also caused by a filter-passing virus? Was it caused by the same virus that produced all the other diseases of this group in which the white matter was mainly affected? His own opinion was that disseminated sclerosis was probably due to a virus belonging to the same group, but that there was not evidence to prove that it was the same virus. He mentioned several instances in which retrobulbar neuritis had been followed by other symptoms of disseminated sclerosis after a period of several years.

Dr. J. G. GREENFIELD dealt with the histological similarities of encephalitis, diffuse myelitis, and acute disseminated encephalo-myelitis, such as occurred after vaccination, measles, and so forth. These diseases all had certain points of similarity to disseminated sclerosis, but histologically they were more related to one another than to that condition. He described two fatal cases in men, seen within the last month, of myelitis coming on after an attack of influenza, both of them being associated with a lesion, so far as he could tell, histologically identical with post-vaccinal encephalo-myelitis. He thought that these cases, with other accumulated data, indicated that in these diseases there was evidence of some toxin present in the nervous system, which was stimulated to activity when the onset of some febrile disease lowered the patient's resistance.

Dr. GEORGE RIDDOCH pleaded for an open mind about the whole situation. In the recent epidemic of influenza he had been greatly puzzled by the multifarious character of the neurological sequelae. He brought forward fourteen cases with a typical influenzal story which had gross neurological manifestations; how to classify them he did not know. None of the patients died. The cerebro-spinal fluid was examined in several and no abnormalities were found. He could not determine the meaning of this heterogeneous group of neurological disorders. The only position for the clinician to take up was to obtain all the help he could from the histologist and pathologist, and to keep an open mind on the problem.

Dr. GORDON HOLMES referred to the occurrence of this disease in previous epidemics, though of limited extent. There was a very definite outbreak of diffuse myelitis and diffuse encephalo-myelitis in the winter of 1905. During the war, in the winter of 1917–18, he saw among the troops a number of cases of a similar disorder. These cases certainly ran a very characteristic course. A certain proportion of them went in a step-like manner, new attacks of the disease occurring after an interval of weeks or months. He had frequently seen remarkable instances of recovery, but many cases, on the other hand, did not recover.

Dr. C. P. SYMONDS, referring to Dr. Adie's remark about the association of retrobulbar neuritis with disseminated sclerosis, said he had seen an instance in which twenty-four years had elapsed between the attack of retrobulbar neuritis, first in one eye and then in the other, and subsequent symptoms typical of disseminated sclerosis. He was sceptical as to the distinction between neuromyelitis optica and disseminated sclerosis. He thought that there were grounds, on both the clinical and the pathological side, for doubting whether the distinction was a true one.

Dr. W. R. BRAIN, after describing some cases, said that the difficulties of classification could only be solved by close co-operation between pathologists and clinicians. One possibility was that the differences in the response shown by the individual to neuromyelitis optica and to disseminated sclerosis might be due to differences of immunity. It was possible that in myelitis the patient received a large dose of virus, and either died or developed complete immunity, whereas in disseminated sclerosis the immunity might be incomplete, with the result that the disease pursued its characteristic course of remissions and relapses.

Dr. PARKES WEBER made a remark about a nervous symptom which had been observed in connexion with influenza and which, he thought, had some bearing on the subject. A middle-aged man was recovering from influenzal broncho-pneumonia when he suddenly developed incontinence of faeces. The sphincter was completely paralysed. This was the first case the speaker had seen of paralysis of the anus following, or being connected with, influenza. This man, under treatment, gradually recovered. A colleague who saw this case with the speaker went to Hamburg, and from there he had written within the last few days stating that he had seen another man suffering from influenza with complete paralysis of the rectum; this case had terminated fatally.

PATHOLOGY OF CERVICITIS.

A MEETING of the North of England Gynaecological and Obstetrical Society was held in Liverpool on March 15th, with the president, Dr. G. W. FITZGERALD (Manchester), in the chair. Dr. K. V. BAILEY read a paper on the pathology of cervicitis.

Dr. K. V. Bailey said he had examined 850 specimens of the cervix uteri with a twofold object: (1) to ascertain the precise pathology of the so-called cervical erosion, and (2) with a thorough knowledge of this pathology as a basis to inquire into the problem of the inception of cervical cancer. He considered that there were two types of pathology of cervicitis. (1) The relatively unimportant and rare condition of congenital erosion was seen in the nulliparous and presumably non-infected cervix. Moench and Reel had described this condition, and considered it due to anomalous growth of the mucous membrane lining the cervical canal. In the speaker's series this type showed definite inflammatory reaction, and, therefore, there was no reason to distinguish it from the inflammatory type. (2) The large group of inflammatory erosions. Dr. Bailey believed that the life-history of this condition fell into four distinct stages. Stage 1: The primary effects of irritation. This stage was characterized microscopically by the stripping off bodily of the squamous epithelium at the level of its lowermost cells by large and small blood cells, and the inflammatory exudate as a whole. Stage 2: Epithelial reaction to inflammatory irritation. This was the stage of proliferation and repair; microscopically the evidences of inflammatory reaction were definitely lessened. The surface exudate was less, and intimately associated with the new surface epithelial covering, which was identical with, and derived from, the columnar epithelium lining the cervical canal. Stage 3: Replacement of columnar by squamous epithelium on the surface of the affected area. In this stage the squamous epithelium grew over the affected area by new cells arising from the basal layer of the nearest unaffected squamous epithelium; it extended upwards towards the adjacent columnar epithelial surface, and lifted the single layer upwards in a lever fashion, thereby gradually replacing it. In this stage the tissues immediately beneath the columnar epithelial layers were greatly rarefied. Stage 4: Ultimate healing. This stage was characterized by the presence of dilated gland spaces situated beneath the new covering, the result of mechanical blocking of their ducts by the squamous cells. Pseudo-malignant appearances resulted from irregular down-growths of squamous cells, especially in connexion with the months of dil gland spaces. Dr. Bailey had found forty-two examples his series of a true ulcerative erosion of the cervix which was pathologically akin to the condition already described. The affected area was depressed with overhanging epithelial edges in immediate contact, and a smooth granular depressed base coated with chronic exudative material. It was a condition relatively common in association with the damaged and hypertrophied cervix usually removed during the operation for uterine prolapse.

The speaker suggested that from the pathological standpoint the term "erosion" was erroneous. He suggested that the group of cases known as erosion ("papillary," "follicular," etc.) should be called "peri-orbicular cervicitis"; that true ulceration of the cervix should be termed "ulcerative cervicitis"; and that infection limited to the cervical glands should be called "glandular cervicitis."

Rupture of the Caesarean Scar.

Professor Blair Bell (Liverpool) showed a specimen of a uterus with the scar of a Caesarean wound. This specimen had been obtained at the post-mortem examination of a patient who died a few hours after an emergency Caesarean section. It demonstrated clearly the result of the procedure advocated by the exhibitor, and described by him in the *Journal of Obstetrics and Gynaecology of the British Empire*, 1925, xxxii, p. 727. The strong, heaped muscular scar, the absence of catgut on the peritoneal and mucosal surfaces, and the complete apposition of the parts were revealed. The speaker said that the question of rupture of the Caesarean scar had often been discussed, and cases had been admitted to the Royal Infirmary in the last few years of both rupture and impending rupture. He knew of no case of his own in which such conditions had supervened. It was, of course, obvious that infection in a scar might be responsible for imperfect union, but he was convinced that the method of suture was of paramount importance, whether in clean or infected scars. An unpunctured, accurately apposed mucosa, and wide muscular union, as shown in the specimen, must be of importance. Furthermore, the absence of suture material projecting on the peritoneal surface removed or reduced a constant source of omental and intestinal adhesions.

The PRESIDENT stressed the necessity for accurate apposition of the edges of the scar. He said that his method of suture was similar to that of Professor Blair Bell, except that he did not use the mattress suture. A patient of his had had a temperature after an emergency Caesarean section. She did not report on her next pregnancy, but delivered herself normally. In the third pregnancy the scar ruptured.

Miss IVENS (Liverpool) said that she avoided the endometrium in sewing up these scars, and used two layers of catgut, the last layer taking a large portion of uterine muscle. She had had an opportunity of studying one of the scars five weeks after Caesarean section. The patient had fibroids, and since conditions were not suitable for hysterectomy at the time of the Caesarean section the uterus was removed five weeks later. The uterus showed that the scar was thicker than the rest of the uterine wall, and, microscopically, its track could be traced by a line of giant cells. Professor BLAIR BELL replied that a badly sewn wound was more likely to rupture afterwards, even in the absence of infection.

Fibromyoma Invaded by Adenocarcinoma.

Professor BLAIR BELL showed a specimen of a fibromyoma invaded by adenocarcinoma of unknown origin in a single woman, aged 47. Eight months previously she had had an operation in another city at which the appendix, right appendage, and a rectal polyp were removed. Since then she had had attacks of very severe pain in the right buttock, which shot down the leg; on examination a fibroid uterus was discovered. At operation a complete hysterectomy with left salpingo-oöphorectomy was performed, and a tumour, densely adherent to the rectum and uterus, was removed. Convalescence was uninterrupted, but the patient continued to complain of severe pain in the lower part of the back. Sigmoidoscopy, by Professor R. E. Kelly, revealed an annular constriction of the rectum, fixed to the left wall of the pelvis. The lumen, which admitted the little finger, was lined by normal mucosa. Professor Blair Bell had been informed that the patient later had a colostomy for intestinal obstruction, and eventually died of uraemia. Sections of the tumour adherent to the rectum and uterus showed it to be composed of ordinary fibromyomatous tissue. No malignant tissue was discovered in the area of attachment to the uterus or elsewhere. It was not possible on histological or other evidence to assert definitely that the malignant development in the fibromyoma was secondary to cancer of the rectum, but this appeared probable, and it was unfortunate that no section was made of the rectal polyp.

Mr. STACEY (Sheffield) said he had seen a case where adenocarcinoma developed in an area of the sigmoid which had been the seat of diverticulitis. Professor BLAIR BELL considered that the invasion of this tumour had probably been along the lines of the adhesions.

Ruptured Papillary Ovarian Tumour.

Professor BLAIR BELL showed a single woman, aged 35, who, eighteen months previously, had had the left ovary removed by Dr. Leith Murray; it was the seat of a growth similar to that he now described. It appeared malignant macroscopically, but on section was proved to be innocent. There were two pints of fluid evacuated from the abdomen due to rupture of the upper pole of the tumour previous to operation; the fluid was not bloodstained. In January, 1929, the patient was admitted to a medical ward with abdominal swelling, dyspnoea on exertion, swelling of the ankles, and loss of weight. One and a half pints of fluid were aspirated from the right pleural cavity, but there was no evidence of tuberculosis. A week afterwards eight pints of fluid were withdrawn from the abdomen by paracentesis. Eleven days later she was submitted to laparotomy under spinal anaesthesia, and two pints of thick, straw-coloured fluid were evacuated. The growth of the right ovary was slightly adherent posteriorly, and the uterus was displaced to the left. It was not removed, owing to the condition of the patient. There were bands running over the growth, which had the appearance of adherent intestine and omentum. The growth was also cystic in several places; its general appearance, however, was that of a friable, soft, solid, malignant tumour. Histologically it was a papillary adenoma.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

A MEETING of the Aberdeen Medico-Chirurgical Society was held on April 4th, with the president, Professor Low, in the chair. A demonstration of clinical cases, with lantern illustrations, was given by members of the staff of the Royal Aberdeen Hospital for Sick Children. Dr. JOHN CRAIG showed a case of coeliac disease in a girl aged 6½, there being a history of diarrhoea for several years, with the passage of large loose pultaceous stools. She had been fed as an infant continuously on a proprietary food. The appearances of the case were classical—infantilism, large abdomen, thin flabby limbs, wasted buttocks, with the usual quaint introspective mentality and squeaky voice. Skiagrams showed many transverse striations of the ends of the long bones. Dr. Craig discussed the diagnosis and treatment, mentioned rickets and tetany as complications, and outlined the latest views on the etiology and pathology of the condition. He then submitted a case of Hirschsprung's disease in a girl aged 6, and showed a girl, aged 7, who had had repeated attacks of unexplained pyrexia. A mass of abdominal glands was discovered, and at operation these were seen to be caseo-purulent tuberculous glands. Removal resulted in the cessation of the febrile attacks. He exhibited skiagrams and a pathological specimen of a case of pyloric stenosis, and an unusual type of bone lesions in congenital syphilis—the pseudo-tuberculous type with caries and no attempt at repair. Dr. H. Ross SOUPER described the appearances and course of a case of acute suppurative frontal sinusitis in a girl aged 10. There was marked swelling of both eyelids and bilateral proptosis, and a fluctuating swelling was present in the mid-line of the forehead. A skiagram showed well-marked opacity of both frontal sinuses, with necrosis of the supraorbital ridges. At the operation pus was found superficial to the frontal bone; both frontal sinuses were filled with pus, and abscess cavities extended through the roof of both orbits. Part of the frontal bone was necrosed, and removal exposed the dura mater. Free drainage was established, but the patient died next day. A haemolytic staphylococcus was isolated from the pus. Dr. Souper also described a case of lateral and cavernous sinus thrombosis in a boy, aged 3, who, on admission, had a temperature of 100.2° F. and slight left otorrhoea, but no definite external signs of mastoiditis. Two days later oedema of the left eyelid appeared, followed by oedema of the right eyelid on the next day. The temperature rose to 103°, and a polymorphonuclear leucocytosis of 43,000 was present. At operation

necrosis of the mastoid cells was found; the lateral sinus was seen to be covered with granulations, and contained a clot, which was removed. The patient received antistreptococcal serum, but died the following day. Dr. Souper discussed a series of 22 cases of tuberculous mastoiditis in children. He said that the condition occurred between the first and third years of life, was insidious in onset, and the facial nerve was often involved. The ear discharge was curdy and flaky, and multiple perforations were often present; early glandular involvement occurred, and the pre-auricular glands were especially implicated. Dr. J. F. CHRISTIE illustrated with lantern slides a case of ecthyma which, he said, was really a deeper form of streptococcal impetigo, although sometimes a deep tuberculous focus was concerned in the etiology. The children were usually in poor condition, and the buttocks, thighs, and legs were most commonly affected. The best application was a 1 per cent. solution of silver nitrate or 1 in 2,000 solution of mercuric chloride. In the present instance the child made a good recovery, but returned to hospital three weeks later with broncho-pneumonia. Six weeks after convalescence the patient was readmitted and died of generalized tuberculosis. Dr. Christie also described a case of pemphigus vulgaris in a boy, aged 3, who had suffered from chicken-pox three months previously. Typical bullae appeared on the arms, backs of the hands, genitals, and adjacent parts of the thighs. The bullae came out in crops without much rise in temperature, and with no itching. A polymorphonuclear leucocytosis was present with 7 per cent. eosinophils. Condy baths were prescribed, and an ointment containing hydrarg. ammon. and ichthyol was applied. Increasing drop doses of Fowler's solution were given by the mouth. There was no improvement after a month, and quinine sulphate was then given. Later, on withdrawing serum from what appeared a sterile bulla, an almost pure culture of a haemolytic streptococcus was found. Antistreptococcal serum was then injected, a total of five doses being given at seven days' interval. Bullae still continued to form, with slight rises in temperature, but at the end of five weeks the child was considerably better, and left the hospital with no signs of any skin affection. Dr. WILLIAM BROWN showed lantern slides of two cases of erythroedema polyneuritis ("pink disease"), illustrating the change in temperament and expression: the swelling of the face and the high colour of cheeks and nose; the presence of stomatitis; the desquamation of hands and feet, with tenderness; and the characteristic attitude in bed; with contrast slides of the children during the attack and on recovery. The two chief indications of the disease were the look of "misery" and the colour of the hands and feet. Both patients were admitted with a history of change of temperament and of depraved appetite, sweating, and redness and coldness of the extremities. One child was in hospital for four months, and the other for two months. Both were treated with a diet rich in vitamin B, in addition to general tonic treatment. Marmite was given in large doses. One patient improved rapidly on receiving ultra-violet rays; calcium was given to both. Mention was made of the similarity, in some respects, between this disease and beri-beri and pellagra, especially the last. Professor Low thanked the speakers on behalf of the society, and expressed special appreciation of the excellent series of lantern slides with which Dr. William Brown had illustrated the cases described.

AT a meeting of the Society for the Study of Inebriety on April 9th, Dr. J. D. ROLLESTON opened a discussion on alcohol in therapeutics. After a brief historical introduction, in which he showed that from the earliest times the medical profession had been by no mean unanimous on the subject, Dr. Rolleston said that a remarkable decline had taken place within the last thirty years in the therapeutic use of alcohol. This was best illustrated by the fall in the alcohol bill in various hospitals; it was also exemplified by the practice of individual physicians, and the small place which alcohol now occupied in textbooks of medicine. The low esteem in which alcohol was held as a therapeutic agent in the United States was shown by the fact that only a minority of practitioners applied for a licence in those States in which the right to prescribe alcohol was granted, and some of these were said to use it for illicit purposes. Dr. Rolleston added that the conditions in which alcohol was still chiefly employed were pneumonia, enteric fever, diphtheria and other acute infections, diabetes, heart disease, tuberculosis, senility, and inoperable cancer, but it did not appear to be indispensable in any of them. The experience at the Western Hospital, of which he was medical superintendent, had shown that in an annual population of 5,000 patients the consumption of alcohol could be almost abolished without any injurious effects. The factors chiefly responsible for the undeserved esteem which alcohol still enjoyed as a therapeutic agent appeared to be tradition rather than scientific evidence, extra-medical influences, and personal considerations.

Reviews.

ASTHMA.

DURING the last few years more books have been written on asthma than on any other medical subject. Though this shows a welcome revival of interest in the subject, it is disappointing to find how little that is really new is added to our knowledge of the pathogenesis or treatment of the disease. Dr. VIKTOR GRIMM, who is already well known as the author of the most complete modern monograph on asthma, has attempted to answer the extremely difficult but very important question, Which climatic factors are of importance for asthmatics?[1] He has analysed the replies received from 600 doctors and asthmatic patients to whom he put the question, and has amplified the results in the light of his experience as physician at Bad Reichenhall and of a review of the ancient and modern literature in all languages. The book is divided into two parts, in which the "climate of the dwelling" and "external climate" are respectively discussed. In the former, sensitization to the stuffing of pillows and other articles of furniture, to animal emanations, and house dust is the most important factor. Dr. Grimm comes to the conclusion that a carefully taken history is more likely to lead to the discovery of the active allergens than the use of skin tests. He emphasizes the remarkable manner in which the allergic state varies with the time of day and the season, with age, menstruation, infections, and diet, and his experience shows that the effect of desensitization is unfortunately only temporary. In discussing external climate Dr. Grimm pays great attention to such factors as temperature, moisture, altitude, wind, and the electrical condition of the air, in addition to the factors dependent on sensitization. The one definite fact which emerges from his observations is the remarkably favourable influence of mountain air. Asthma is almost unknown among the permanent inhabitants of the Engadine and Davos, and quite 90 per cent. of asthmatics rapidly become completely well in the mountains. This does not depend upon the purity of the atmosphere or the absence of emanations to which the individual is sensitive, but upon some profound biochemical change in the individual's blood which is caused by altitude.

In his book on asthma[2] Dr. LUDWIG HOFBAUER of Vienna gives a fairly adequate account of the subject. It is, however, curious to find that he regards the narrowing of the bronchi in the attack and their widening after injection of adrenaline as dependent on vasomotor and not broncho-motor changes, being apparently unaware of the experiments of Brodie and Dixon, which showed that the relief obtained with adrenaline was due to stimulation of the broncho-dilator sympathetic fibres. The chief interest in the book lies in an admirable description of the anatomy and physiology of the nose and bronchi and their bearing on the prevention and treatment of asthma. For many years Dr. Hofbauer has obtained excellent results by means of respiratory exercises, the importance of nasal instead of mouth, and diaphragmatic instead of thoracic breathing being specially emphasized. At the present time, when many physicians are apt to concentrate their attention too much on the sensitization factor, and rhinologists on operative and antiseptic treatment, it is useful to have the value of a quite different and very simple treatment emphasized. Though in other hands it is hardly likely to give such remarkable results, there are few asthmatics who would not benefit by the regular use of Dr. Hofbauer's breathing exercises. His advice to avoid baths and to sleep with the window closed would hardly suit English patients, and his fear of arterio-sclerosis resulting from the frequent use of adrenaline is doubtless due to the gross overdose (1/2 to 1 c.cm.) which he recommends.

[1] *Welche Klimafaktoren sind für den Asthmatiker von Wichtigkeit?* Von Dr. Viktor Grimm. Veröffentlichungen aus dem Gebiete der Medizinalverwaltung, xxvi Band, 5 Heft. Berlin: R. Schoetz. 1928. (Med. 8vo, pp. 284. M.12.60.)

[2] *Asthma.* Von Privatdozent Dr. Ludwig Hofbauer. Wien: J. Springer. 1928. (6¼ × 9½, pp. vii + 156; 38 figures. R.M.10.80.)

PEMPHIGUS.

PEMPHIGUS is essentially one of the "grandes dermatoses," as the French designate the more serious diseases of the skin. The clinical characteristics are so clearly marked and easily recognized that it has attracted the attention of dermatologists from the very beginning. The latest monograph[3] by Professor SABRAZÈS and Dr. TORLAIS, although it cannot be said to solve the problems of etiology and pathology set by this baffling condition, is well worth reading by all who are interested in it. The authors have based their work on seven cases of their own, which are related in detailed exactitude, but perhaps the most valuable part of the monograph is to be found in the discussion of the various views held, and the researches carried out, by other observers. In the pathology of the disease one of the most striking observations mentioned—not perhaps quite new, but certainly not widely recognized—is that the fluid drawn from the typical bullae contains no less than 10 per cent. of protein, a proportion greater than that found in the fluid of cardiac or renal oedema, or even in the actual serum of the blood. The authors have come to the conclusion that the time-honoured classification of pemphigus into the *vulgaris*, *foliaceus*, and *vegetans* groups is quite irrational, inasmuch as these are all variations of the same disease. They go even further than that, for they also include the well-known dermatitis herpetiformis and Brocq's chronic polymorphic dermatitis as members of the pemphigus group. They regard pemphigus as essentially a microbic affection, not necessarily due always to the same microbe, and they are inclined to think that the characteristic bullae owe their formation to some inherent peculiarity of the patient's skin, causing it to react in this particular way. Those patients who are unfortunate enough to possess this peculiarity in the highest degree suffer from the congenital condition known as epidermolysis bullosa; those in whom it is not so pronounced may acquire pemphigus later in life, and in these the vulnerability of the skin is shown by the presence of Nikolsky's sign. This is a fascinating theory, but cannot be accepted without further investigation. It depends on the assumption that Nikolsky's sign is always congenital and that it cannot be acquired.

THE FUNDUS OCULI.

IT is always a pleasure to take note of the work of one who is a pioneer; and when his work is of solid merit, has been compiled with considerable pains and care, and is, in addition, of no small artistic merit, the pleasure becomes correspondingly greater. It is with such feelings that we introduce the volume of *Photographs of the Fundus Oculi*[4] which has been compiled by Dr. BEDELL of New York.

In the ordinary course of events, in order to obtain a pictorial record of changes in the fundus, paintings have to be done by hand—a laborious process, both for the artist and the patient, and, since the surgeon rarely has the ability or the time to attend to the matter himself, frequently attended with results that leave much to be desired from the point of view of scientific accuracy. A process of photography would seem to be the obvious solution of the difficulty, but the adaptation of a technique applicable to the interior of the living eye has been beset with difficulties. The pioneers in this work have been Wolfe, Thorner, Salomonson, Dimmer, and Nordenson; and from these, especially the last, Bedell has drawn his inspiration. The photographs were taken with the Nordenson camera of Zeiss, in which the source of illumination employed is the carbon arc (what effect of discomfort it has upon the patient we are not told). Its use results in the complete destruction of the film at the spots where the light is focused, and hence two circles of white (representing the two carbon poles) appear on each photograph. The effect of this is undoubtedly annoying, but it can only be got rid of at the expense of a blurred image. Colour photography, of course, is out of the question, because of the length of the exposure and the intensity of the light which would be required. In such a photograph all the details of the fundus are rendered very evident. Blood, whether in a vessel or appearing as a haemorrhage, is black, or nearly so; yellow material, as in a fresh exudate, varies with the depth of the mass, the thicker the deposit the whiter it appears; pale yellow becomes lighter on a background of contrast; and white is of varying intensity, depending on the background upon which it is found. In this way details can be reproduced with meticulous exactitude, and not the least valuable result of the method is that the progress of a lesion in the fundus, whether for better or for worse, can be followed by records which permit of no cavil. In addition, the possibility of taking stereoscopic photographs allows of a very accurate perception of depth. Is a disc, for example, cupped, or (what is more important) is the cupping progressive? Is a "mass" in the fundus raised, or (what is more important still) is the "mass" growing? If questions such as these can be answered unhesitatingly, then the method, even despite its obvious complexity and expense, is fully justified. One interesting point the stereoscopic camera in Bedell's hands seems to have brought out is that "holes" at the macula are relatively common without any other ocular injury; moreover, a depressed, dark macula is frequent in certain types of uveitis, in circulatory disturbances, and in spontaneous retinal detachment in addition to the classical form following injury. From the medico-legal standpoint this is of some importance.

To appreciate all the clinical points which these photographs demonstrate it is necessary to consult the atlas itself. Altogether it is a most extensive compilation, unique of its kind in the literature of the world, and likely long to remain so. It contains 95 plates, 324 single photographs, and 272 stereo-photographs, each selected with care to represent some one or other point of interest. It is a monument to the enthusiasm and industry as well as to the clinical acumen of its compiler; and it is of the nature of a triumph for its American publishers.

DELINQUENCY IN TWINS.

VERBRECHEN ALS SCHICKSAL[5] (or delinquency as destiny) is a monograph by Professor JOHANNES LANGE of Munich, dealing with delinquency occurring in twins, in which he endeavours to determine whether heredity or environment is the preponderating causal factor. Identical or uniovular twins are alike in appearance, and the author endeavours to show that their reactions and nervous disorders are likewise similar. In his notes we find instances of two boy twins living some distance apart, who both fell sick at the same time and were operated on for appendicitis, and also of two who were petty swindlers and simultaneously became bald, fat, and diabetic. Finally, the author lays down that, in twins, concordance in life's events is due to similar hereditary factors, whilst discordance implies their absence. From prison records he has collected thirty pairs of twins, thirteen uniovular, and seventeen binovular, one of whom at least in each case had been convicted. In ten cases among the thirteen uniovular twins, the partner had also been convicted (concordance); but among the seventeen binovular twins, this had only happened in two cases, and in these two cases other causal factors were clearly traced, thus reducing the number to fifteen, in which only one of each twin pair had been convicted (discordance). Concentrating his attention on the ten cases of uniovular twins, Professor Lange gives full records, extending over fifty pages, demonstrating their concordance in body and behaviour. The hereditary factor in criminality is suggested from the observation that 77 per cent. concordance occurs in uniovular as against 12 per cent. in binovular twins. The author estimates the other convicted brothers of uniovular twins as about 1 in 4, of binovular as 1 in 8.5, and quotes Viernstein's observations in Straubing prison on the ordinary convicted brothers of prisoners as 1 in 12. He holds that if criminality is a compulsory

[3] *Le Pemphigus.* Par les Drs. J. Sabrazès et J. Torlais. Paris: G. Doin. 1929. (Roy. 8vo, pp. 80; 10 figures. 15 fr.)

[4] *Photographs of the Fundus Oculi.* By Arthur J. Bedell, M.D. Philadelphia: F. A. Davis Company. 1929. (7¾ × 10½, pp. 317; 95 plates, 324 pictures, and 272 stereoscopic photographs. 25 dollars.)

[5] *Verbrechen als Schicksal.* Von Professor Dr. Johannes Lange. Leipzig: G. Thieme. 1929. (6¼ × 10, pp. 96; 5 figures. M.7.)

matter, the result of laws we cannot withstand, there is no right to punish in the narrow sense. Security of the community is the aim of punishment, although not realized in the means. He advocates improved after-care, and, more pressing still, restriction of alcohol; early recognition of delinquents through better criminal study; and prophylaxis through genetic measures in preventing individuals with active criminal heredity from being born. The Bavarian research is a sound start, but deeper and wider knowledge is needed for its completion.

PREVENTION OF TUBERCULOSIS.

IN his book *Some Methods for the Prevention of Tuberculosis*[6] Dr. W. BOLTON TOMSON has assembled and presented, in a manner likely to interest the public administrator no less than the medical practitioner, an account of some of the tuberculosis schemes operating in Europe and America. Holding that many of the schemes built up in England have failed to realize the results anticipated at their inception, and that progress in the eradication of tuberculosis is practically at a standstill, he analyses the general principles underlying methods which have been successful, and suggests how in this country they might be translated into effective action. In the main, the principle animating the chief organizations in France, Belgium, Switzerland, Norway, Sweden, and America has been *dépistage*—namely, the separation of the possible victim from the source of infection. Of this kind are the Grancher Association, established in France in 1903 for the protection of children against tuberculosis, and the *Placement Familial des Tout-Petits* founded in 1920 to deal from birth with children in danger of contracting the infection. In England, on the other hand, the view underlying many tuberculosis schemes is that it is possible, by raising the bodily resistance against the disease and by diminishing the intensity and size of the infecting dose, to prevent not infection but its consequences. The value of the English view, with its corollary that repeated small doses of infection, far from being harmful, may actually confer immunity, has been demonstrated, Dr. Tomson believes, by the results obtained in our tuberculosis village settlements. In the Papworth Colony, for example, not one of the 140 children born of tuberculous parents since its foundation in 1916 has suffered from any form of tuberculosis, and at Preston Hall a similar record has been established since its reorganization in 1925. The advantage of the settlement to the patient is that he can live a sheltered life, working when he can and resting when he should. The patients, says Dr. Tomson, "are no longer a misery to themselves or a danger to others. They beget children that grow up strong and well, untainted and unaffected by the disease from which their parents suffer." Moreover, as the Papworth records show, a settlement can be made to become self-supporting. Dr. Tomson's conclusion is that, however admirable may be the work of organizations carrying out the principles of *dépistage*, the village settlement, by rendering possible the successful immunization of children born of tuberculous parents, affords the best hope of eradicating the disease.

BACTERIOLOGY.

PROFESSOR DIBLE has accomplished a difficult task in his book *Recent Advances in Bacteriology*.[7] To give a judicial summary of "advances" in any subject is far from easy, but when the subject is one which is still showing a youthful exuberance of growth the task of choice and rejection is particularly difficult. The author has avoided the mistake of giving a mere catalogue of other people's opinions. He has made the story interesting and readable to everyone, even when talking about the streptococci, or the bacteriophage, or B.C.G., or recent laboratory work in connexion with infectious diseases. These are the main subjects dealt with in this volume, and the reader is presented with a very comprehensive account of what has been accomplished in the field of bacteriology during the years from the commencement of the war to the year 1928.

One of the most important points to notice about any book of bacteriology is for whom it is intended. Dr. CURTIS HILLIARD'S *Textbook of Bacteriology and its Applications*[8] is a good account of the general science of bacteriology written for students of science, but not for medical students. Even public health questions such as water and food analysis are not dealt with sufficiently thoroughly for students preparing for the D.P.H.; but for general science students it would be a useful book, well written, accurate, and convenient in size.

NOTES ON BOOKS.

THE Correct Lines of Dietetic Therapy,[9] by Professor FRITZ RABE, represents a real attempt to discuss dietetic therapy on sound and scientific lines. In such a work it is, of course, neither possible nor even desirable for the author entirely to avoid controversial ground; when, however, Professor Rabe enters debatable territory his remarks are characterized by moderation and soundness of outlook. This is especially well illustrated in the section dealing with nephritis, which shows evidence of wide knowledge and careful thought. Constipation, the happy hunting ground of the commercial publicist, is dismissed in a few paragraphs. It is unfortunate that there are so few books in English that cover so concisely and effectively a similar range of subject.

In a volume on *The New Psychology of the Unconscious*[10] Dr. C. W. VALENTINE, professor of education in the University of Birmingham, aims to give a concise exposition of his subject, and to indicate what he believes to be fairly well established and what is still speculative theory or hasty generalization in the new teaching. He also aims to bring the main doctrines into line with "orthodox" psychology, and to show how they may be regarded as unfamiliar examples of recognized fundamental laws of the mind. This book is a revision of *Dreams and the Unconscious*, published in 1921.

In *How to Stain the Nervous System*[11] Mr. J. ANDERSON has produced a very useful little book. Descriptions of so many of the more modern methods are scattered through foreign journals that it is quite hopeless, for example, for a junior medical officer in a mental hospital to reach them. This small book gives him all he wants to begin with. It would have been an advantage to have given Oeterle's method of staining spirochaetes in the nervous system, as Jahnel's method takes such a long time to carry through.

The popularity of Dr. A. E. HERTZLER'S monograph on *The Technic of Local Anesthesia*[12] is evidenced by the fact that a fourth edition has been called for within three years of the appearance of the third edition. The aim of the author has been, as he says, not to show what operations can be performed under local anaesthesia, but in what operations it is to be preferred. He exhibits no particular bias towards the particular form of anaesthesia he is describing, and quite readily agrees that in certain patients general anaesthesia would be best. In fact, he approaches each case with an open mind, and prescribes the anaesthetic he considers most suitable just as he would prescribe any other drug; he does not hesitate to use combined local and general anaesthesia where indicated. His descriptions of technique are clear and very readable; they are supported by many well-chosen illustrations beautifully reproduced on paper suitable for this purpose. The book can be confidently recommended to those interested in local anaesthesia.

The twenty-first volume of the *Bulletin of the Ophthalmological Society of Egypt* comprises the proceedings of this society during its twenty-fifth session. Reports are included of the annual meeting in Cairo in March, 1928, and of the International Ophthalmological Conference at Scheveningen, Holland, in July, 1927. Dr. M. A. El Bakly contributes some clinical notes based on a visit to Vienna. Short illustrated articles on ophthalmological subjects compose the bulk of the volume.

[6] *Some Methods for the Prevention of Tuberculosis.* By W. Bolton Tomson, M.D. London: Baillière, Tindall and Cox. 1929. (Demy 8vo, pp. ix + 148; illustrated. 6s.)

[7] *Recent Advances in Bacteriology.* By J. Henry Dible, M.B.Glas., M.R.C.P. London: J. and A. Churchill. 1928. (5¼ × 8¼, pp. vii + 363; 22 figures. 12s. 6d. net.)

[8] *A Textbook of Bacteriology and its Applications.* By Curtis M. Hilliard. London and New York: Ginn and Co., Ltd. 1928. (Demy 8vo, pp. ix + 329; 59 figures. 12s. 6d. net.)

[9] *Richtlinien diätetischer Therapie.* Von Professor Dr. Fritz Rabe. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8¼, pp. 110. M.4.60.)

[10] *The New Psychology of the Unconscious.* By C. W. Valentine, M.A.Cantab., D.Phil.St. Andrews. London: Christophers. 1929. (Cr. 8vo, pp. xiv + 162. 4s. 6d.)

[11] *How to Stain the Nervous System.* By J. Anderson. With an introduction by J. G. Greenfield, B.Sc., M.D., F.R.C.P. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. x + 139. 5s. net.)

[12] *The Technic of Local Anesthesia.* By Arthur E. Hertzler, M.D., Ph.D., LL.D., F.A.C.S. Fourth edition. London: H. Kimpton. 1928. (7 × 10¼, pp. 284; 146 figures. 25s. net.)

SUPPLY AND DISTRIBUTION OF RADIUM.

THE SUBCOMMITTEE'S REPORT.

IN last week's issue (p. 736) we were able to give only an outline of the conclusions and recommendations contained in the report of the Radium Subcommittee of the Committee of Civil Research,[1] which was published as we were going to press. We return to the subject this week because we believe that this report, which embodies a detailed account of the existing supply of radium available for medical treatment in Great Britain, a consideration of the possibilities afforded by existing and potential sources of radium production, an estimate of the amount of radium at present required for medical purposes in England, Scotland, and Wales, and a proposed scheme for the purchase and distribution of a central stock of radium for medical purposes, is a document of the deepest concern to the medical profession. Its recommendations, if adopted, will determine the method by which the bulk of the radium used in this country for medical purposes will be bought and administered for many years to come.

Radium in Medical Treatment.

Following a brief account of its procedure during the inquiry, the subcommittee makes a balanced statement of the importance which in recent years radium has acquired in medical practice. With the elaboration of methods for the radium treatment of cancer of almost every region of the body except the stomach, there has occurred a transformation of the modes adopted for its application, above all in regard to the time of exposure, the quantity of radium to be employed, the position to be selected for it, and the so-called surgery of access. The subcommittee reaffirms the view now generally held that radium will, in increasing measure, replace excisional surgery in the treatment of cancer, and that already cancer of the uterus may be treated as effectively with radium as by operation. The amount of radium now available, though greater than it was in 1926, is still inadequate to cope even with the most pressing needs. There exists, moreover, a lamentable shortage of highly trained radium surgeons, and a corresponding shortage of available hospital beds. Remedy of these deficiencies, the subcommittee believes, will follow the acquisition and general availability of an adequate supply of radium. Whereas the best radium practice in Great Britain is as good as that in any country, it must be conceded that Sweden and France, in large measure owing to the interest displayed by their Governments, have made the greater contribution to the stock of existing knowledge in regard to the treatment of cancer with radium.

Estimated Amount of Radium Available for Medical Treatment.

Since 1919 approximately 2.4 grams of radium element recovered from surplus sources of war material has been entrusted by the Government to the Medical Research Council, and by it distributed on loan to hospitals conducting approved schemes of research in radium therapy. Apart from one fraction which has been allocated solely for experimental work, and one which is retained at the Middlesex Hospital as a source of supply of radium emanation (radon), the bulk of the radium thus lent has been used mainly, though not exclusively, for purposes of treatment. The task of estimating the amount of radium available for medical purposes held by institutions and private medical practitioners was complicated by three main difficulties. Hospitals holding a given amount may have added to it in the interval between the publication of two successive annual reports; some hospitals may possess radium of which the subcommittee failed to obtain information; and there may be untraced stocks held by private medical practitioners. With these reservations the subcommittee estimates that, held at present by institutions and practitioners in England and Wales, there are 9.531 grams of radium, which within the next three months will almost certainly be increased to 20.567 grams, and that in Scotland the existing stock of 1.136 grams will, in the same period, be increased to 2.136 grams. Of the amount in England and Wales it is estimated that London will hold 10.707 grams—that is, more than one-half of the total.

[1] Cmd. 3303. H.M. Stationery Office. 1929. Price 6d. net.

The Economic Use of Radium.

The fullest use of radium can be ensured only when there is a sufficient series of patients with the same disease at the institution where the treatment is administered and it is possible to transfer the appropriate applicators rapidly from one patient to another. Not only are such conditions rare in general hospitals admitting cases of all types, but even when a group of hospitals shares a stock of radium its transfer from one to the other must necessarily involve some loss of time. It follows, therefore, that the available radium can be used economically only if in each area radium treatment is concentrated in specialized centres large enough to obtain an adequate supply of patients. In existing circumstances it is possible to calculate the extent to which full use is being made of radium supplies by working out for each hospital the average period during which known quantities of radium are employed in proportion to the total period for which it is available. At the Metropolitan Asylums Board centre for the treatment of cancer of the womb it is calculated, given a steady flow of patients, that the radium might be used for about 70 per cent. of the available time.

Present Requirements.

In Great Britain, from all sources, Governmental and private, the total available radium is approximately 24.9 grams. Of this amount 22.7 grams, or—excluding the Beit gift of 4 grams, the future distribution of which is not at present known—18.7 grams are distributed unevenly over England and Wales, and 2.2 grams are held in Scotland. Of the 18.7 in England and Wales, 12.6 grams are in London, and 6.1 are distributed in the provinces. Assuming that the supply in London were enough for its population of eight millions, then for the provinces, with a population of about thirty millions, the amount required would be at least 24 grams. Calculating on this basis the present radium requirements of England and Wales would be 36 grams or, making due allowance for its probable share of the Beit gift, at least 15 grams more than it holds at present. This calculation taken by itself is, however, quite misleading; it is made on a population basis without allowing for the fact that many cases from the provinces are now treated in London, and that a certain number would continue to be sent to London even if provincial sources were adequate. It is made, moreover, on the untenable assumption that the present requirements of London hospitals are being adequately met. Finally, it makes no allowance for the rapid and continuing progress in the development of radium surgery, and assumes that requirements are in a static condition. For these reasons the subcommittee believes that 20 grams would be a conservative estimate of the present radium deficit in England and Wales, and, calculating in a similar manner, 4 grams in Scotland. If, however, large additions were made immediately to the existing radium supplies great difficulty would be experienced in finding surgeons and hospital beds in adequate numbers to use them; the subcommittee therefore recommends the adoption of a programme which aims at securing a net increase of 20 grams of radium to be available for medical purposes at the end of 1930. Purchases on this scale would give sufficient opportunities for the necessary provision of adequate numbers of trained staff and of beds available for patients treated for cancer with radium.

The Sources of Radium Production.

At present the main source of radium production is Belgium, where 30 or 40 grams of radium element (approximately the amount of the world's present annual consumption) were produced in 1928 from ore mined in the Belgian Congo. The chairman of the subcommittee (Lord Rayleigh, F.R.S.) is satisfied that there is no justification for the view that Belgium holds large reserves of ore. At Oolen, where the Congo ore is worked up, he was shown stock amounting to about fifty tons, and was told that if the factory was not always in full activity it was because the ore did not come in fast enough. Originally, moreover, the ore was so

rich that ten tons would yield a gram of radium; now about thirty or forty tons were necessary to produce this amount. Should prospecting fail to discover a richer ore a shortage of radium supply will have to be contemplated eventually. American carnotite ores come second as a potential source of radium, but though radium cannot be extracted from carnotite profitably by the present methods, the United States Bureau of Mines has recently developed a process by which it claims that it may obtain exceptionally high extraction of radium at costs considerably lower than those of existing processes. The subcommittee thinks it improbable that any of the ores mined in Cornwall are abundant enough to yield radium in sufficient quantities to compete commercially with the ores from the Belgian Congo. Canada, Australia, South Africa, India, Ceylon, and Tanganyika, though containing radio-active deposits, are not likely at present to add appreciably to the world's radium supply. Other sources of supply of minor importance are Czechoslovakia, Madagascar, Portugal, and Russia.

The Cost of Production.

Complex problems are involved in estimating the cost of production of radium. Prospecting is usually prolonged and expensive; the estimates of available tonnage in any given mine are of necessity highly speculative, and the estimation of price must be largely guesswork. Until a mine is actually worked out it is impossible to calculate whether any real profit has been made; indeed, a company may sell its product at apparently a high profit, only to find in the end that it has been working at a net loss. The cost of extracting radium is high in relation to the cost of the ore, and owing to uncertainties of demand, and more recently to uncertainties about the delivery of the ore, it has not been found possible to keep the works in constant operation. Factors determining the retail price are the cost of the containers, which are frequently of platinum, and the constantly developing technique in radiotherapy, which necessitates modifications in the form in which radium is to be made up by the manufacturers. Finally, radium is produced only as a by-product of companies engaged in some other form of mining, and it is difficult to determine the profit which is theoretically attributable to each of the company's products. The subcommittee reproduces a calculation made by the United States Bureau of Mines of the cost in August, 1915, of providing 1 gram of radium from low-grade carnotite ore containing about 3 per cent. uranium oxide. The cost of production was £7,752, which, conditions being equal, may be assumed to be considerably lower than the cost of producing an equivalent amount of radium to-day. From this survey of the sources of radium production the subcommittee concludes that if it is decided to make immediately any considerable addition to the stock of radium in this country the only means of doing so is by purchase from the Belgian producers. It holds, however, that if arrangements could be made for purchases to be effected through a single agency it would be possible to buy for substantially lower than the present retail price of £12 a milligram.

RECOMMENDATIONS.

The Need for Co-ordination.

No common policy exists at the present time among the hospitals for the acquisition or use of radium. Institutions buy when and where they can, with the result that stocks have been acquired for particular localities without reference to the needs of the country as a whole. Competitive buying helps to maintain the present high market price of radium; it leads, moreover, to the employment of radium in institutions inadequately equipped with the necessary specialized personnel and other requirements to ensure efficiency. In the subcommittee's view research and treatment by radium must continue for many years to be intimately associated, and any institution that desires to undertake this work efficiently must have an adequate stock of radium, up-to-date *x*-ray installations, facilities for first-class surgery, experienced and highly trained personnel, a fully equipped pathological laboratory, a physics department, and a library—conditions obtaining in some large hospitals and institutions, but generally unattainable except in organized centres.

To deal with the problem of irregular and unco-ordinated distribution of radium as between one area and another, with the difficulties of institutions possessing inadequate supplies, and with the mobilization of radium to the best advantage, the subcommittee proposes not complete centralization, but a form of organization in which the principles of a centralized and of a decentralized system are so adjusted as to give the best results in the various and varying circumstances which will have to be met. It recommends, therefore, that an organization should be established forthwith by the Government for the better distribution of radium in this country, and should be entrusted with the 20 grams of radium which the Government should aim at acquiring at the end of 1930. The necessary organization could be achieved in two ways: the Government might acquire the amount of radium that is needed and entrust its distribution to a Government committee appointed by the appropriate Minister or Ministers, more or less on the same lines as that of the existing Radiology Committee of the Medical Research Council; or it might decide to constitute trustees, in whom the radium bought with the moneys provided by Parliament or otherwise would be vested, and who would appoint an expert body charged with the duty of distribution.

The Proposed Organization.

Of these alternatives the subcommittee prefers the second, and proposes that the Government should constitute a body, entitled the National Radium Trustees, to act as a holding body of the funds provided by Parliament or otherwise, and authorized to purchase therewith and hold radium for the use of a body of experts, a Radium Commission, with functions analogous to those hitherto performed by the Radiological Committee of the Medical Research Council in relation to the radium now held by the Council for research purposes. It recommends, furthermore, that the trustees should be empowered to act as buying agents for the hospitals and other institutions in this country, and for Dominion and Colonial Governments. The Trustees should comprise the following persons:

> The Lord President of the Council (who would naturally be the chairman), the Minister of Health, the Secretary of State for Scotland (as the Head of the Department of Health for Scotland), the President of the Royal Society, the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the Chairman of the Central Liaison Committee of Voluntary Hospitals in Scotland, the President of the Royal Society of Medicine, and the President of the British Medical Association,

with power to co-opt not more than two additional members. The first duty of this body would be to appoint the Radium Commission, with the following powers and duties:

> "Generally to deal with the custody, distribution, and use of all radium held by the trustees, having regard to the advancement of knowledge, the treatment of the sick, and economy of use; and, in particular, to consider and approve plans submitted to them for the use of radium for the purposes of medical treatment and research, and to make the necessary arrangements for the supply of radium for such uses."

The subcommittee recognizes that the success or failure of its scheme will turn largely on the personnel selected to form the Radium Commission, which, in its view, should be composed not of representatives of particular institutions or interests, but of the best available experts of the several sciences underlying radium therapy; moreover, it must be so constituted as to ensure that it will work in harmonious relations both with the medical profession and with the Government departments concerned. The subcommittee recommends accordingly that the Commission should consist (in addition to the chairman, who should be a distinguished public man but not necessarily a member of the medical profession, and should be nominated by the National Radium Trustees) of eight persons. Of these, four should be nominated by the National Radium Trustees, and one each respectively by the Minister of Health, the Secretary for Scotland, the Medical Research Council, and the Department of Scientific and Industrial Research. The subcommittee suggests that members of the Radium Commission should be appointed in the first instance for a period of four years, and should be eligible for reappointment after an interval of one year, but that the chairman should be eligible for immediate reappointment. It suggests that the nomination of a member by the Department of Scientific

and Industrial Research would constitute a valuable initial link between the Commission and the National Physical Laboratory, which is administered by that Department. The subcommittee further suggests that at an early stage arrangements should be made by the Radium Commission with the National Physical Laboratory for (*a*) the custody of the radium put at the disposal of the Commission by the National Radium Trustees when such radium is not actually in use for medical purposes, (*b*) its preparation in form for use, and (*c*) its recovery from such preparation on return from loan.

It is not anticipated that the annual expenditure on the preparation and recovery of radium or the administrative expenses of the Radium Commission will amount to a substantial sum in relation to the initial cost of purchasing the proposed quantity of radium. Arrangements might not unreasonably be made to secure a set-off to the cost of these services, to be defrayed by a small charge made for the loan of radium by the Commission to institutions. Finally, it is argued that progress throughout the country will be greatly promoted by the free communication of information as between all the working centres, and that one of the important functions of the Radium Commission may prove to be the collection and publication of methods and results of radium therapy for the country as a whole.

Provision of the Funds Required.

Discussing the manner in which funds for the purchase of the 20 grams of radium needed immediately might be obtained, the subcommittee favours the following method:

> The money might be furnished in part by the Government and in part by the public. If this course were adopted, the best plan would probably be a public appeal, in which the Government would undertake to contribute pound for pound up to some maximum sum to be determined.

The subcommittee has no doubt that in this way immediate success would be assured, and the £200,000 required could be raised without difficulty. An appeal on these lines from the Government to the public would, in its opinion, secure the £200,000; if not, it would still be possible for the Government at a later stage to furnish some subsidy to stimulate contributions from the public.

> "In making any appeal the Government should make it clear that they did not suggest that all gifts for the purchase of radium should henceforth be placed at the disposal of the National Radium Trustees. The need on the part of the larger institutions to have their own supplies would still continue, and some donors will naturally prefer to equip in this respect particular institutions. There can be no doubt, however, that the most urgent need at the moment is the creation of a distributing organization and the placing at its disposal of an adequate supply of radium for loan or hire to institutions and research workers as and when they require it."

As reported in our last issue, the Chancellor of the Exchequer announced, on April 16th, that the Government accepted the financial recommendations of the subcommittee—in other words, that the Government would contribute up to a maximum of £100,000 on the basis of £1 for every £1 privately subscribed. Mr. Churchill added that the subcommittee's recommendations on the subject of organization had been accepted by the Government in principle, but that the precise form of the organization would remain open to further discussion.

ROYAL MEDICAL BENEVOLENT FUND.

STEADY progress is being made in its beneficent work by the Royal Medical Benevolent Fund, and the report of a very successful year was presented to the annual meeting on April 18th. The increase in subscriptions and donations amounted to £1,032, bringing the total revenue from this source up to £8,623. In its annual report for 1928 the committee placed on record its appreciation of the work done by the honorary local secretaries of the Fund, through whose efforts many new subscribers have been obtained, and also of the co-operation of the British Medical Association. A total sum of £1,667 was received through the Association last year—£800 being an allocation from the Charities Committee, and the remainder earmarked subscriptions sent through the Association or the *British Medical Journal*—an advance of £396 on the previous year. The increased income has enabled the committee to help a greater number of applicants, and also to give larger grants, but in very many cases the amount of the relief is still far from adequate to meet the needs of the case. During last year 485 grants were made, amounting to £8,772, either to medical practitioners who, through old age or illness, were unable to work, to widows of medical men who had been left penniless, and frequently with children to educate, or to daughters of medical men who were too old or otherwise unable to support themselves. In some cases the committee has been called upon to help widows and daughters whose incomes have been lost through unfortunate investments or other causes, but more frequently it has had to assist ladies who have struggled to support themselves by teaching, needlework, or even domestic service until they have become unable to work any longer. Approximately £500 has been expended in the education of orphans, but this branch of the work is mainly undertaken by the Ladies' Guild. An appeal through the medical press for contributions towards children's summer holidays met with a fair response, as a result of which a number of orphans of medical men benefited by a country holiday, and a renewed appeal is to be made this year. The number of annuitants on the Fund, all of them over 60 years old, is now 179, and the total amount paid in annuities last year was £4,816.

Sir Thomas Barlow, who once again presided over the annual meeting, spoke of the great loss which the Fund had suffered through the death of its honorary secretary, Dr. Newton Pitt. Dr. Pitt's work, he said, had always been so quietly and modestly done that many of those who subscribed to the Fund, or who benefited from it, were altogether unaware of the personality and the labour of the man who guided its fortunes with such zeal and wisdom. During the fifteen years that he was its secretary Dr. Pitt devoted a part of every day he was in London to the Fund's requirements, and to all applicants and others he consistently showed the greatest courtesy and kindness. The Fund was fortunate, said Sir Thomas Barlow, in finding so good a successor to Dr. Pitt as Sir Percy Sargent, who was well acquainted with the needs of the Fund and had already done a great deal of work on its behalf. Sir Thomas went on to say how much the committee appreciated the work of the Ladies' Guild. Not only did these ladies look after the needs of wives and families in such matters as clothing, education, and occupation, but they brought into the distressed home a breath of fresh air, and found a way out of very many practical difficulties. The financial results, Sir Thomas thought, had been very satisfactory. The Fund had received yeoman help from the British Medical Association, and in addition to the large accession of revenue from this source, the committee had the advantage of Dr. C. O. Hawthorne, representing the Association, as a member who had rendered great help, which his colleagues highly appreciated.

Sir Charters Symonds, the treasurer, in presenting the statement of accounts, pointed out that, although in the grant department £2,000 more had been distributed than in the previous year, yet the extra cost was only £50, another instance of the economy with which the Fund was administered. In connexion with the annuities the committee had found it possible at last to make six annuities of £100 each. Hitherto the maximum annuity has been £40; these increased annuities had been made possible largely as the result of a bequest of the late Dr. Alexander Lawrence, and it was hoped to increase their number during 1929. To be able to give a larger annuity had long been a cherished hope of Dr. Newton Pitt, and it was some satisfaction to feel that this step was taken by the committee some little time before Dr. Pitt's death.

On the motion of Dr. Hawthorne, Sir Thomas Barlow was re-elected president, Sir Charters Symonds treasurer, and Sir Percy Sargent and Mr. R. M. Handfield-Jones were made joint honorary secretaries. Twenty-two additional vice-presidents were also elected.

British Medical Journal.

SATURDAY, APRIL 27TH, 1929.

THE CARE OF MENTALLY DEFICIENT CHILDREN.

THE long promised and patiently awaited report of the Joint Committee of the Board of Education and the Board of Control on Mental Deficiency[1] was published last Saturday. Even so, it is published only in part. That portion of the report which deals with adult defectives is still mysteriously withheld. Neither delay nor withholding is the fault of the joint committee themselves; indeed, in a prefatory note they mildly protest that the "proper sequence and right perspective" of their report has been damaged thereby, as well as its "coherence and force." In the public interest it is necessary to press for, even to insist upon, the early publication of the missing Part III. It would be very valuable at the present time, when schemes involving the care of adult mental defectives are being considered by local authorities in connexion with the Local Government Act; and no individual, however advantageously placed, should be able to keep from the public the considered opinions of a body of persons pre-eminently competent to influence and guide those interested in the subject with which they deal.

Incomplete as it is, the report is extraordinarily interesting and full of valuable suggestions, pointing not merely to the eradication of imperfections of detail in our present system of dealing with mentally defective children, but to a radical revision of the system itself. After describing the nature of mental defect and reviewing the present legislative and administrative arrangements for the care of mentally defective children, both educational and other, the committee gives an account of the special investigation into the incidence of mental deficiency in six selected and representative areas by Dr. E. O. Lewis, whose detailed and invaluable report forms Part IV of the committee's publication. They find that the total number of mentally defective persons in England and Wales is over 300,000; that this incidence figure of some 8.5 per 1,000 population is approximately twice as great as that given by the Royal Commission on the Feeble-minded in 1908; that the incidence of all grades of defect in urban areas is 6.7 per 1,000, as compared with 10.5 in rural areas; that after all allowances have been made there has been some definite increase in the incidence of mental deficiency during the past twenty years, and that this is connected intimately with other important social problems. The committee then suggests a scheme for the future allocation of responsibility for children between local education, mental deficiency, and other authorities, and for the educational provision to be made, and they wisely include in this scheme the large marginal group of educationally retarded children not now described as mentally defective in the narrow sense. No doubt, as is the case with most reports of Governmental committees, many people will be content to read only the chapter summarizing the conclusions and recommendations, and for those who have only a very general interest in the subject this, together with the chapter on the nature of mental defect, may suffice; but the whole report is so authoritative, so well thought out, and so well expressed, that the whole of it is to be commended to the consideration of teachers, medical officers, social workers, and administrators alike.

The system proposed by the committee can be described here only in outline. Assuming, as is now generally agreed to be desirable, that the age of compulsory school attendance will be from 5 years of age to 15, and that there will be an educational break and review of attainment and capacity at 11 years of age with a wide variety of educational opportunity thereafter, it is proposed that there shall be no differentiation in these age limits as between normal and mentally defective or retarded children. It is proposed, too, that there shall be no need to "certify" children as mentally defective before they can be sent to a "special" school, but that all children and schools alike should be retained within the normal public elementary education sphere, provision being made, both before and after 11 years of age, for groups of children of varying educational capacity. There would have to be some degree of compulsion so that an education authority could secure the attendance of a child at the school or class most suitable for his requirements, and the need for certification would remain in the case of those children who were found to be "uneducable" (say, with a mental ratio under 50 or 55), or who were so socially as well as educationally defective as to require the care of the mental deficiency authority. For children of the lowest type occupation centres rather than schools would be provided unless they were sent to residential institutions; and it is not contemplated that local education authorities would as a rule set up separate schools or departments for the younger retarded children (whether feeble-minded, dull, or backward) except in the largest towns; but at the age of 11 years or so such children would be transferred to schools or classes where their education and training would be specially adapted to their needs along the lines followed in the best of our existing special schools. This would be a part of the general reorganization of post-primary education which is contemplated in the near future. This outline scheme is worked out in detail in chapter viii of the report, and a clear diagram of what is intended is given. The suggested educational provision for three age groups and for three grades of mental ratio is shown, and the respective spheres of the local education authority and the local mental deficiency authority are indicated.

There are a good many difficulties in the working out of this plan, but, if the plan itself be approved, they are not insurmountable. Some conspicuous merits of the plan will be evident to those who are familiar, whether as administrators or as teachers, with the working of existing arrangements. They are clearly brought out in the report, which contains also a number of minor but very valuable suggestions for improving these arrangements and more effectively carrying out what no doubt Parliament intended to be done by its Education Acts and Mental Deficiency Acts. The report is certain to be the subject of much discussion by persons interested and expert in the subjects with which it deals, as at the conference under the auspices of the Central Association for Mental Welfare at the moment taking place. The existence of the joint committee has from time to time been made the official excuse for discouraging action on the part of local authorities, and it is to be hoped that now that this part of its report has been published

[1] London: H.M. Stationery Office. 1929. 5s. net.

speedy progress may be made by Government departments and local councils in making provision for the most appropriate instruction and care for feeble-minded, mentally retarded, and socially defective children.

THE CURABILITY OF ASTHMA.

No disease offers more interesting problems for solution than asthma, and none has been the subject of more intensive study during the last few years. Numerous papers and books have been published on asthma in England, America, and on the Continent, and it is one of the subjects chosen by the Section of Medicine for the Annual Meeting of the British Medical Association to be held in Manchester next July. Several asthma clinics have been established in America and Canada, and a journal for asthmatic patients is published in Germany and one for sufferers from hay fever in America. This widespread activity in the investigation of the asthma problem has certainly led to a great increase in our knowledge of its pathogenesis, but this knowledge is still very incomplete, and it is doubtful whether any corresponding advance in the treatment of the condition has resulted. There appear to be as many uncured asthmatics in Great Britain to-day as at any previous period, and the numerous so-called cures of the present time seem to be little more effective than those which were announced with equal enthusiasm twenty-five years ago. In one particular alone is the lot of the asthmatic infinitely better than it was formerly, and that is in the treatment of the attack itself; the irritating and often ineffective powders and inhalations of the past are no longer required since the discovery in 1904 by Dr. Bryan Melland of the immediate and complete relief which follows the injection of adrenaline. We cannot, however, feel satisfied until means are found of permanently preventing the attacks, and so rendering the use of adrenaline superfluous.

Asthma has been defined as the reaction of an over-excitable bronchial nervous system to blood-borne irritants and to peripheral and psychical stimuli. During the last few years much has been learnt about the factors concerned in setting the asthma centre into activity, but unfortunately little is still known about the cause of the constitutional and often inherited condition which manifests itself in an irritable bronchial nervous system. It is true that the less frequently attacks occur the less tendency there is for attacks to be produced by stimuli which were at one time operative. To this extent treatment directed to the removal of the exciting causes also favourably influences the constitutional basis of the disease. But the latter remains, though less active, and a man who has once had asthma remains liable to it for the rest of his life, even if he is free from attacks for ten or twenty years. A true "cure" of asthma would therefore consist in the eradication of the factors upon which the actual excitability of the bronchial centre depends. Dr. Oriel, working in the asthma clinic founded by the Asthma Research Council in conjunction with the Medical Research Committee at Guy's Hospital, has obtained some evidence of a biochemical basis for the condition, and there is reason to hope that work on these lines may lead to an effective means of overcoming the constitutional basis of asthma. The dietetic treatment long advocated by Dr. Adam of Glasgow probably acts by correcting these biochemical abnormalities.

The remarkable effect of residence in the Alps, emphasized in the recent book by Dr. Grimm on the effect of climate on asthma (reviewed at page 769), is probably also due to the influence of altitude on the biochemistry of the blood. The benefit derived from a visit to the Alps is experienced very rapidly by nearly all asthmatics. Though a relapse generally occurs sooner or later on returning home after a short stay, most asthmatic children can be permanently cured by a prolonged residence in the mountains, even when every attempt to procure relief by diet, desensitization, and nasal treatment at home has failed. The improvement which sometimes follows such diverse forms of treatment as diathermy, ultra-violet rays, x rays, and the various methods of inducing so-called protein shock is probably due to some influence which diminishes the excitability of the bronchial nervous system, but unfortunately the benefit obtained is only temporary, and the treatment tends to become less effective on repetition.

The striking difference of opinion as to the curability of asthma which our correspondence columns have recently revealed is due mainly to differences in the use of the word "cure." Most physicians of experience have seen many asthmatics who have been "cured" repeatedly by those who pin their faith on single methods of treatment, whether this is directed to desensitization, nasal cauterization, or any of the innumerable other "cures" for asthma, each of which has its enthusiastic advocates. It is obvious that a patient with cat-asthma will get relief if he avoids cats; this was shown by Hyde Salter sixty years ago, and it does not require the modern methods of skin tests to discover it; but the patient is not cured, as he still has an irritable bronchial nervous system, which is liable at any time to respond to other chemical, reflex, or psychical stimuli. In the same way the asthmatic who is told that he is sensitive to feathers and will be cured by using a kapok pillow rarely remains free from attacks for long. He may even develop a hypersensitiveness to the mould which Storm van Leeuwen has shown is apt to develop on kapok, and it is interesting to note that in countries in which kapok pillows are habitually used it is as fashionable to recommend feather stuffing for the pillows of asthmatics as the reverse is in England.

The remarkable diversity in the methods of treatment which have been said to cure asthma is an indication that the only satisfactory way of dealing with the condition is to have every case as thoroughly investigated as possible for the various chemical, reflex, and psychological factors which may irritate the bronchial centre. By means of a well-taken history it is generally possible to discover whether an individual is sensitive to bacterial toxins, animal emanations, foods, pollen, or other chemical substances. The value of skin tests as a means of confirming suspicion aroused by the history has unfortunately proved disappointing in the hands of many observers. The source of bacterial toxins may be found in an infection of the bronchi themselves, the tonsils, nose, teeth, and alimentary tract. Among reflex causes the nose is the most important, but the stomach, rectum, and even the genital organs, require consideration. Lastly, there is no doubt that an individual with the asthmatic constitution may develop attacks as a direct result of psychological disturbances, and no case can be regarded as completely examined without attention being paid to this factor. Such an investigation is always worth undertaking, as the treatment based upon the results obtained is at least likely to remove some of the chief causes of

attacks in the individual concerned. But until more is known about the nature of the underlying constitutional abnormality anything in the nature of a genuine cure will continue to be a very unusual occurrence.

It is clear from what has been said that the need still remains for much further research into the problem of asthma. The non-medical sufferers from asthma, who found themselves no better after trying almost every known asthma "cure," were well advised when they inaugurated the Asthma Research Council, because it is only by a broad scheme of research into every aspect of the problem that a satisfactory solution cure will continue to be a very unusual occurrence.

CHILDREN AND THE FOUNDLING HOSPITAL SITE.

EVER since the Foundling Hospital site was bought by the Foundling Estates Ltd. in November, 1926, there has been a feeling among the majority of the public that the children of London had a moral claim upon this piece of land, which had been dedicated to the use of children for the past 200 years. It was no doubt in part due to this feeling that various building schemes, including that for transferring Covent Garden Market and that for a national theatre and opera house, were abandoned, and the original suggestion for hotels, luxury flats, etc., on the site also fell through. Hopes were high when the Board of Management of the Great Ormond Street Hospital for Sick Children entered into negotiations with the syndicate which had bought the site. The proposal was that the public should have the use of the greater part of the grounds as a park and playground for children, while on about four acres of the north portion a new children's hospital should be built. Money, it was stated in a letter to the *Times* last November, was the sole obstacle to the realization of these plans, and a last-minute appeal was made, but without response. There the matter stood until it was announced last week that Lord Rothermere was paying a deposit to secure the Foundling site until June, 1931. According to the published reports (exact details have not yet been issued) there is a condition attached to this generous action—namely, that the entire site shall be used as a children's park, subject to the reservation that for one month in the year this park shall be placed at the disposal of the British Boy Scouts Association for a camping ground. The Board of Management of the Great Ormond Street Hospital for Sick Children are hoping that Lord Rothermere may be induced to see that the claims of this hospital for a portion of the Foundling Hospital site are at least equal in importance to the necessity of a playground for the children in the immediate vicinity. The present Children's Hospital has been built up piecemeal from its small beginnings in 1852, and is in a somewhat airless and sunless situation. Compared with similar institutions abroad it is hopelessly out of date, and does a magnificent work in very difficult circumstances. Foreign visitors still flock to take advantage of the wonderful clinical material which it offers, but they have to visit provincial cities, such as Birmingham and Glasgow, to find a children's hospital built in the style to which they are accustomed in their own country. The opportunity of erecting a modern hospital for the treatment of children's diseases in the richest city of the world on a site which has all the advantages of centrality and accessibility is one which every lover of children must hope will not be allowed to slip away. The Great Ormond Street Hospital serves not only Greater London, but draws patients from all over the country, and even from foreign parts. If the children have a moral claim on the Foundling site, what could be better than that the sick child and the well child should both enjoy this great open space? That the Great Ormond Street Hospital does serve all the children of this country is illustrated by Sir James Barrie's most charming and generous gift of all the rights in *Peter Pan* for the use of the hospital. This will mean a welcome addition to its annual income amounting to at least £2,000, and all the children who flock to greet their hero every Christmastide will be helping to support a worthy institution. What could be a more fitting sequel to Sir James Barrie's gift than that others should follow Peter's lead, and enable the board to put up a modern building on the Foundling site?

RADIUM POLICY.

WE publish this week at page 772 a full account of the report by the Radium Subcommittee of the Committee of Civil Research on the radium requirements of Great Britain in relation to the present sources of supply. It may be assumed that the Government, having already accepted in principle the subcommittee's recommendations on the subject of organization, will immediately set up a body of Trustees to hold the funds provided by Parliament and otherwise and to purchase therewith radium for distribution by an administrative body of experts to be known as Commissioners. Four of the nine National Radium Trustees whom the subcommittee proposes should be appointed in the first instance are medical men of the highest standing—the Presidents respectively of the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Society of Medicine, and the British Medical Association. The holders of these offices at the present time are Sir John Rose Bradford, Lord Moynihan, Lord Dawson, and Sir Ewen Maclean. Through them the opinion of the medical profession will be expressed in the nomination by the Trustees of five out of the nine Radium Commissioners whom the subcommittee recommends should be appointed to take general charge of the radium held by the Trustees and to make all arrangements for its distribution. The constitution and personnel of the Radium Commission are clearly matters of the utmost importance for the successful working of a national scheme. In the subcommittee's view this body should be composed of "the best available experts in the several sciences underlying radium therapy." All will agree that such experts are indispensable, but we cannot insist too strongly on the need for full medical representation also, and in particular for the inclusion of men familiar with the use of radium in medical practice. This point is implicit in the letter by Mr. Souttar printed at page 787, and we may hope that it is being borne in mind by the Government while the details of organization still remain, if not fluid, at least unsolidified.

HELMINTHIC INFECTIONS.

WE are privileged to print elsewhere in our columns this week (p. 755) a lecture on some epidemiological and serological aspects of helminthic infections by Professor F. Fülleborn of the Tropical Institute at Hamburg. Professor Fülleborn is one of the foremost of Continental parasitologists, and his work on helminthology has won the appreciation of scientists in all parts of the world. The subject on which he speaks with such authority is a most important one to an empire such as ours, controlling as we do vast tracts of tropical and semi-tropical country. Hookworm

disease, it is true, has not the spectacular appeal of the great killing diseases such as malaria, tuberculosis, and syphilis, but the parasites do cause a definite amount of debility, anaemia, loss of weight, and lethargy, which have a definite economic effect on the patient. Moreover, they predispose to other infections, and in conjunction with slight attacks of such diseases as malaria or with malnutrition—in themselves perhaps not very harmful—a serious condition is produced and a considerable mortality results. When it is borne in mind that at least two-thirds of all the inhabitants of tropical and subtropical countries harbour these parasites, it is obvious that ankylostomiasis is one of the most important of imperial diseases, causing, directly or indirectly, much economic loss, sickness, and even death. In India alone it is estimated that 45 million wage earners are infected, with a loss in wage-earning power of over Rs500 million yearly. This is only an isolated example, which could be multiplied indefinitely from Africa, America, and the East generally. Other parasites are equally prevalent, and some of these are mentioned in Professor Fülleborn's paper. Ascaris is even commoner than hookworm in many parts, and it is not by any means confined to warm countries. While hookworm principally affects older children and adults, ascaris is found in infants even more frequently than in their elders. Its pathogenic properties are not yet well understood, but they are probably considerable. Man, where parasites are concerned, is intimately interested in the forms in lower animals, as the paper indicates, and the intense irritation caused by the wandering of foreign parasites in his skin, described by Professor Fülleborn, is a problem which more particularly concerns white people in the tropics. The helminthic parasites are amongst the oldest known causes of disease, but the modern study of bacteriology and protozoology has tended to eclipse their continued importance. Professor Fülleborn's paper is accordingly a timely reminder not only that disease is international, but that the older known and comparatively gross causes must not be overlooked in these days of the excessively minute.

MEDICAL ASPECTS OF A POLITICAL PROGRAMME.

WE are not concerned with the speech with which the Prime Minister opened the Conservative General Election campaign last week in its party political aspects; but the speech contained references to matters in which the medical profession is greatly interested—factory legislation, slum clearance, education, and the health of mothers and children—and these statements are, of course, of considerable importance. The position with regard to the Factory Bill is highly unsatisfactory. It is a departmental bill, prepared by the Home Office, and was introduced in the first instance under the last Labour Government. It consolidates and amends factory legislation in a way which, on the whole, is desired by the medical profession in the interests of public health. Repeated pledges to pass it into law during particular parliamentary sessions have been broken, and though the Prime Minister now renews this pledge in the form that the bill "will be one of the first of the measures we shall pass in the new Government," recent history cannot be forgotten, and there is no statement as to whether the bill will cover the wider field that was originally intended or will assume the truncated form which is apparently more acceptable to the present Home Secretary. Committees of the British Medical Association and of the Society of Medical Officers of Health have jointly made considered recommendations to the Home Office with regard to certain proposals contained in the bill, and it will probably be necessary to press these again at an early date upon whatever Government is in power after next month's election. It was at the autumn dinner of the British Medical Association in 1927 that Mr. Chamberlain first made the announcement that the Government, considering that their housing programme had made sufficiently satisfactory progress, would shortly devote themselves to the clearance or reconditioning of slum areas, many of which had remained unaffected by the provision of new houses. Mr. Baldwin now says that this "will be a task to which the new Government will devote the whole of its strength and mind after the election." This is satisfactory so long as it is understood that "reconditioning" means more than mere cleansing, decoration, structural repair, and minor sanitary improvements. The Prime Minister claimed more for the education record of the Government than will probably be allowed by those most interested in that sphere of communal activity. There is, indeed, a general impression that in this sphere there has, on the whole, been a lack of encouragement and a damping down of progress during the past few years. It is to be hoped that Mr. Baldwin's words indicate a real desire to move forward with greater rapidity on lines which are generally agreed upon. On the subjects of maternity and child welfare the Prime Minister's statement was of peculiar importance and interest. It is gratifying to note that public health in several spheres is to be a matter of somewhat special regard. The care of children between the ages of 1 and 5 years was referred to thus: "One of our first acts will be to form a strong committee of inquiry into this whole subject to advise us what would be the best way of treating it." If and when such advisory committee is appointed it will be important to secure proper medical representation thereupon, and especially among its personnel some who have had experience of general family practice. With regard to maternity Mr. Baldwin said: "We have come to the conclusion that maternity benefit under the National Health Insurance Act is not at present being expended to the best advantage. Proposals are therefore under our consideration for making available to insured women and to the uninsured wives of insured men proper medical and midwifery services during pregnancy and childbirth, in addition to providing some cash payment on confinement." This will be heartily welcomed by the British Medical Association. It will be remembered that both before the Royal Commission on National Health Insurance and, more recently, before the Departmental Committee on the Training and Employment of Midwives, the Association has given evidence to the same effect. In the Annual Report of the Council, Appendix IV, printed in last week's *Supplement*, an admirable statement of the position and of certain general proposals will be found under the subheading of "The Ideal Midwifery Service" (p. 124). Recently, too, the Council sanctioned the appointment of a special subcommittee to formulate a detailed scheme for a maternity service in connexion with the national health insurance system on the lines laid down in the evidence referred to. This action was very opportune, and it is hoped that even by the time the Representative Body of the Association meets in Manchester in July the profession may have before it such a scheme prepared on the initiative of the profession itself. This may prove very helpful to whatever Government may then be in power, and will certainly provide a basis for the criticism of any Government proposals in this important and urgent matter.

THE STATUS OF THE RADIOLOGIST.

IN a special hospital issue of the *Journal of the American Medical Association* published on March 30th, there appear a number of papers discussing, among other things, "Radiology as a medical specialty" and "The status of radiology in America." It is quite clear from the statements made that the same problems confront radiology in the United States as in Great Britain. In brief, the main points are those which concern lay radiologists, the hospital position, the status of the trained medical radiologist—a

be a mere technician or a medical consultant?—and the prospects and future position of radiology and radiologists. Technique has been made so simple by the improvement in apparatus and tubes that the younger generation are unable to visualize the difficulties of the pioneers. Anyone with average intelligence and dexterity can, in a very short time, be taught how to produce good films of various conditions. It is unfortunate that the public generally, many medical practitioners, and even a number of consultants, still consider that the "picture" is all that is required, and are not prepared to look upon the radiologist as a consultant; they hold, in short, that it is the pictures which are paid for, and not the opinion. The competition of hospitals, and the status of the medical radiologists attached to them, are becoming increasingly important. No hospital now, cottage or otherwise, considers itself properly equipped without an *x*-ray department, but whether a duly qualified radiologist is in charge of the department is often a secondary consideration. There is also a definite tendency among the lay members of hospital committees to authorize payment for *x*-ray work done in the institution—in fact, to make money out of the *x*-ray work. None of these things are for the good of either the public or the medical profession. The profession, if united, could in a very short time considerably improve matters. It is in the interests of the profession that *x*-ray work should be in the hands of duly qualified and specially trained medical men and women, and that the status of such specialists should be exactly the same as that of others who devote themselves to special work. No lay radiographers should work in hospitals or in private practice except under expert medical control. If this was the rule, as it should be, the status of those devoting themselves to a most difficult branch of medical practice would become higher, the standard of radiography would improve, and this work would attract more of the best students than it does at present.

SECURITY OF TENURE IN PUBLIC POSTS.

THE Minister of Health received last week a deputation from the National Association of Local Government Officers and the National Union of Public Employees, in regard to the position arising as a result of the recent decision of Mr. Justice McCardie in the case of Brown *v.* Dagenham Urban District Council, which was discussed in a leading article in the *Journal* of March 9th (p. 461). The deputation was introduced by Sir Herbert Nield and Mr. Wills, who drew attention to the fact that the purport of the decision was that certain local government officers were liable to dismissal without notice or reason given, even in the case of an appointment that had been made upon condition that its termination should be subject to a specified notice. The Minister said that he appreciated the serious results of the decision, which he accepted, of course, as a correct interpretation of the law. While he agreed that the matter could not be left where it was, he pointed out that legislation would be required to alter the present position, and it was obviously impossible for him either to introduce legislation in the present Parliament or to give at the moment any pledge binding on a future Government. In the circumstances it seemed to him that the best course would be to refer the matter to the Royal Commission on Local Government for their examination, and he undertook that this should be done at once. The British Medical Association is in close touch with the National Association of Local Government Officers on this matter, and deferred asking the Minister to receive a deputation until the result of the previously arranged deputation was known. The views of the British Medical Association have been placed before the Minister, and further developments will be followed.

VACCINATION FOR BRITISH VISITORS TO FRANCE.

ON April 20th there took place at Calais the conference announced in our last issue (p. 738), between representatives of the French and British Governments, to discuss the precautionary measures that should be adopted in view of the occurrence of cases of small-pox in certain British ships and the fact that other cases were under treatment in Great Britain. In relation to the ships arriving from the Far East it was decided to apply, on the sole responsibility of the French Government, the measures prescribed by the International Convention of June 26th, 1926; this action has already resulted in the tracing of the alleged case of small-pox in the *Mashobra* and the isolation of cases at the quarantine station at Frioul. To deal with ships coming from British territory where small-pox patients from India have been landed and are now under treatment, the French Government has requested the British Government to secure the medical examination, before they disembark, of all passengers leaving England for the Continent. By the Convention of 1926 the French Government may also keep under observation unvaccinated persons coming from territory in which there is an epidemic, even though they arrive in ships which have had no case of small-pox on board. To this end the French Government has decided that from April 21st until further notice all passengers landing in France, except those possessing a vaccination certificate not less than ten days and not more than five years old, will be required to fill up a sanitary passport, to be obtained en route, and will be kept under observation in France for fourteen days if necessary. Passengers from England to whom these passports have been issued must supply the French authorities with a statement of their addresses and movements during the first two weeks of their stay in France. They are required to report themselves to the health authorities or mairie of each place they visit, and not to leave any place within fourteen days except with the permission of the authorities. The mere vaccination of passengers before they disembark is not considered an adequate measure of protection, since it will not prevent the disease from appearing in, or spreading from, persons in whom it is already in a state of incubation. The mayor of Le Havre's decision to enforce locally the original instruction that passengers from England must either produce a certificate of vaccination within the past two months or be vaccinated before landing has resulted in a considerable fall in the number of passengers entering France by this route.

STRANGEWAYS MEMORIAL FUND.

SOME two years ago a fund was inaugurated in memory of Dr. T. S. P. Strangeways of Cambridge, who died on December 22nd, 1926.[1] In the opinion of the official members of the committee the time has now come when this fund should be vested in trustees under a deed, and a meeting of the committee (at the rooms of the Royal Society of Medicine, 1, Wimpole Street, W.) will be called for May 16th, at 5 p.m., to give instructions to the treasurers. The deed must provide for the judicious use of the fund during the next fourteen or fifteen years to secure the education of the four younger children (the three elder having graduated with honours since the fund was first administered, and having begun their careers). Donations have been very generous, but have not quite reached the figure calculated in the appeal. Anyone who has not yet paid in an intended subscription should send a cheque at once to Lloyds Bank, Cambridge, crossed "a/c Strangeways Memorial Fund," or a cheque drawn in the same way may be sent to Sir Humphry Rolleston, Bt., K.C.B., Southfield, Trumpington Road, Cambridge.

[1] *British Medical Journal*, February 12th, 1927, p. 298.

YEAST AND PUFFERY.

THE old pharmaceutical term for yeast was *Faex medicinalis*. We are reminded of this rather unpleasant name for a useful substance by some highly objectionable advertisements of a proprietary brand of yeast that have been appearing lately in popular American and Canadian journals which circulate also in this country. Each of the florid advertisements we have seen (and we have seen far too many) occupies a whole page of the periodical, and includes what purport to be signed testimonials from medical men in Europe or the United States. Each panegyric adjoins a portrait of the person to whom it is attributed, with a few fulsome words about him by way of introduction. A sketch map of Europe at the bottom of one of these advertisements bears the following legend:

> FAMOUS EUROPEAN M.D.'S CITE YEAST BENEFITS.
> London, Paris, Berlin, Vienna, Copenhagen . . . What would you give for a health prescription from leaders in these great medical centers? . . . They give you, here, the benefit of their experience!

It is indeed, in the words of Hamlet, "a kind of yesty collection." We must deplore the fact that the owners of a proprietary article have thus made use of the names of members of the British medical profession. It is scarcely credible that the medical men whose names have been used in this way have been parties to it, and we hope, therefore, that we may have an opportunity of publishing their disclaimer.

THREE lectures on drug-like actions of some food constituents will be delivered by Professor E. Mellanby at University College, Gower Street, W.C.1, on Monday, Tuesday, and Wednesday next at 5.15 p.m. Dr. J. A. Gunn, professor of pharmacology in the University of Oxford, will preside at the first lecture. Professor S. J. Cowell will deliver the inaugural lecture of his course of six lectures on dietetics at St. Thomas's Hospital, S.E.1, on Thursday, May 2nd, at 5 p.m., when the chair will be taken by Sir Arthur Stanley, treasurer of the hospital. The other lectures will be delivered on succeeding Thursdays at the same hour. Professor T. R. Elliott will take the chair at the first of two lectures on some of the sequels of epidemic encephalitis lethargica, to be delivered at University College, Gower Street, by Dr. A. J. Hall, professor of medicine in the University of Sheffield, on Friday next at 4 p.m.; the second lecture will be delivered on May 10th. Admission to all the lectures is free.

THE KING.

THE bulletin published on April 15th said that His Majesty continued to make satisfactory progress, and the rheumatism of the right shoulder was yielding to treatment. A week later, on St. George's Eve, the King himself addressed from Craigweil House a message to his people, which has caused universal gratification. The publication of this personal message is generally, and very naturally, regarded as meaning that the King is convalescent, and that his complete recovery is now only a matter of time and reasonable care. Our profession will especially value His Majesty's words of gratitude for "the wonderful skill and devotion" of the medical men and nurses whose care has brought him back from danger.

FIFTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

As previously announced, the fifth International Congress of Military Medicine and Pharmacy is being held this year in London from May 6th to 11th; its meetings will take place in the Great Hall of the British Medical Association, the Board Room of the British Dental Association, and the Lecture Hall of the Pharmaceutical Society of Great Britain. Official delegates have been appointed by the following countries: Albania, Argentine Republic, Australia, Bechuanaland Protectorate, Belgium, Canada, Chili, Czechoslovakia, Cuba, Denmark, Ecuador, Egypt, Estonia, France, Greece, Hungary, India, Irish Free State, Italy, Japan, Lettonia, Netherlands and Netherlands East Indies, New Zealand, Nicaragua, Norway, Persia, Peru, Poland, Rumania, Salvador, Siam, Spain, Sweden, Switzerland, United States of America, Uruguaya, and also by the League of Red Cross Societies and the International Committee of the Red Cross. Some 800 foreign delegates and members, including 300 ladies, will attend the congress; the total number attending will be approximately 1,100, and the membership list is now closed.

The congress will be inaugurated by Sir Laming Worthington Evans, Bt., Secretary of State for War, who will also open the exhibition of service medical equipment, drugs, dressings, and surgical instruments in the House of the British Medical Association. The subjects to be discussed are as follows.

1. Evacuation of sick and wounded by air and water. The role of the medical service in combined operations. Reporting countries: Great Britain and France.
2. Tropical fevers of short duration. Reporting countries: Great Britain and the Netherlands.
3. Injuries to blood vessels and their sequels. Reporting countries: Great Britain and Belgium.
4. Physical and chemical analysis of the glass and rubber articles employed by the medical services. Reporting countries: Great Britain and Spain.
5. The standard of dental and physical fitness in the various military services. Reporting countries: Great Britain and Cuba.

The following official visits are being arranged. At Aldershot demonstrations will be given at the R.A.M.C. Training Centre, the School of Hygiene, the Cambridge Hospital, the Dental Centre, and various R.A.S.C. establishments. The barracks will be shown, and there will be a display of physical drill. An excursion will be made to Portsmouth, where members of the congress will be shown over H.M.S. *Hood*, the *Victory*, the Submarine Depot, and Haslar Hospital; a demonstration of the method of removing the sick to and from battleships will be given. The Lord Mayor and Corporation of Portsmouth will entertain the visitors to luncheon. During a visit to Halton members will be shown over the R.A.F. hospital, barracks, and workshops, and ambulance airplanes.

The Prince of Wales will receive the principal official delegates, and an official dinner will be given to them, followed by a reception at Lancaster House for all members of the congress. A banquet will be given by the Lord Mayor and Corporation of the City of London. There will be receptions by the Royal College of Physicians, the Royal College of Surgeons, the Royal Army Medical College, and by Dr. Henry S. Wellcome at the Wellcome Historical Medical Museum. The Society of Apothecaries, the British Dental Association, and the Pharmaceutical Society of Great Britain will entertain members of the congress.

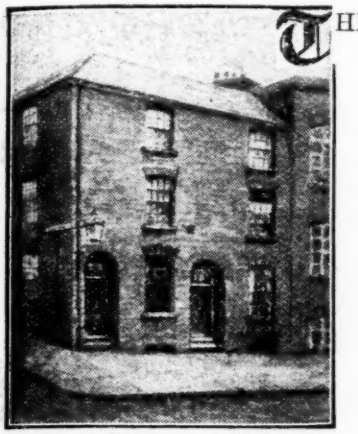
Facilities for inspecting the Tower of London, Hampton Court, and the various London museums will be afforded, and visits to the Royal Mint are being arranged. The interests of ladies are being well provided for. The executive committee of the Forum Club, Grosvenor Place, has invited ladies attending the congress to a reception on May 10th, and a visit will be made to Ham House on the invitation of the Earl of Dysart. A visit to the Guildhall has been arranged, followed by receptions by the Grocers' and Drapers' Companies; receptions will also be given by the Institut Français du Royaume Uni for French ladies, and by the British Italian League at the Ladies' Army and Navy Club for Italian members of the congress.

NINETY-SEVENTH ANNUAL MEETING

of the

British Medical Association.

MANCHESTER, 1929.



THE PUBLIC INFIRMARY IN MANCHESTER, 1752.

THE ninety-seventh Annual Meeting of the British Medical Association will be held in Manchester next summer under the presidency of Mr. Arthur H. Burgess, F.R.C.S., Professor of Clinical Surgery in the University of Manchester, who will deliver his address to the Association on the evening of Tuesday, July 23rd. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the morning sessions being given up to discussions and the reading of papers, and the afternoons to demonstrations. The Annual Representative Meeting, for the transaction of medico-political business, will begin on the previous Friday, July 19th, at 9.30 a.m. Preliminary notes of the subjects for discussion in the nineteen Scientific Sections are published in the *Supplement* this week, together with the names of the officers of Sections, and further details of the arrangements for the Annual Meeting will appear from time to time in later issues. The sectional meetings will be held for the most part in the buildings of the University. During the week, and in particular on the last day of the meeting (Saturday, July 27th), there will be excursions to places of interest in the North-West of England. We publish below the third of a series of descriptive and historical notes on Manchester and neighbourhood written for the occasion by Dr. E. M. Brockbank. The first article appeared on December 1st, 1928 (p. 1003), and the second on January 26th, 1929 (p. 167).

THE HOSPITALS OF MANCHESTER AND SALFORD.

VOLUNTARY HOSPITALS.

THERE are fifteen voluntary hospitals in Manchester and one in Salford, with approximately 2,500 beds in all. In Manchester the Royal Infirmary, Ancoats Hospital, the Jewish Hospital, and in Salford the Royal Hospital, are general hospitals, the remaining twelve being devoted to one or other special form of disease. Two of the special hospitals, those for diseases of the eye and of children, have the Royal patronage.

According to the report of the local Medical Charities Fund the ordinary annual expenditure of these sixteen hospitals is about £350,000, and the ordinary income is about £320,000—a deficit of £30,000 per annum. Some hospitals work at a loss, others are able to keep within their income. This, like that of all voluntary hospitals, comes from subscriptions and donations, interest on investments, collections from various sources, contributions from patients according to means to pay, payments from approved societies and local authorities (tuberculosis and venereal disease), etc. As in other towns, the number of subscribers is comparatively few, and the names of most of them are to be seen on several of the hospital lists.

All the hospitals suffer from want of beds, which is the natural result of the growth of the population and of the great increase in the treatment of disease by surgery, especially of appendicitis, gastric and duodenal ulcer, and ear disease. Nearly all the voluntary hospitals have hundreds of patients awaiting admission for treatment, the latest exacting demand being for investigation of glycosuria and its treatment by insulin. Furthermore, the modern methods of laboratory diagnosis and of physical and electrical treatment require an amount of space undreamed of by architects even of this century.

AN AERIAL VIEW OF MANCHESTER.
A, Radium Institute. *B*, Royal Eye Hospital. *C*, Royal Infirmary. *D*, St. Mary's Hospitals. *E*, Christie Cancer Hospital.

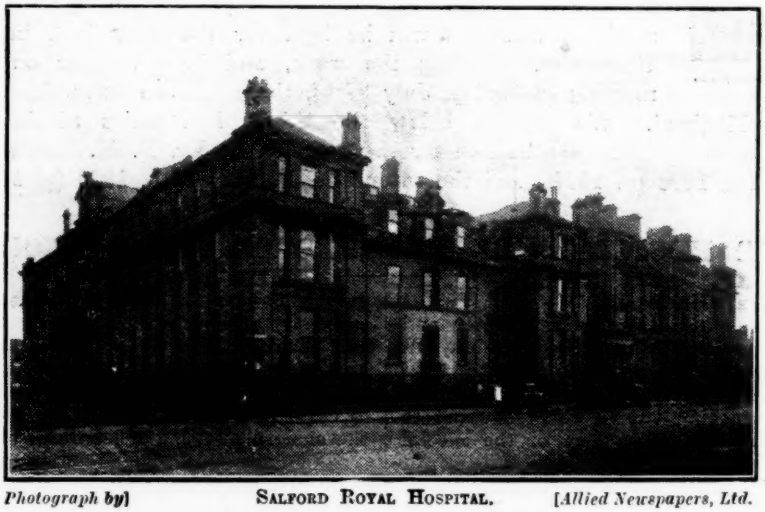
The heavy waiting lists are due to the very large number of cases sent from outside the two cities. The cost per bed in hospitals has trebled since August 4th, 1914, and for a variety of reasons, an important one being the above-mentioned methods of diagnosis and treatment and the cost of special food—for example, for the treatment of glycosuria. Two large collecting organizations help matters materially in the neighbourhood.

1. *The Manchester and Salford Medical Charities Fund*, formerly known as the Hospital Sunday Fund, collects and annually distributes about £40,000 among the hospitals and a few dispensaries and allied treatment centres; the amount allocated to each institution being calculated on the number of beds and patients, and work done, generally speaking. In addition to collections in places of worship in the two towns

and the neighbouring towns on one Sunday in the year, this fund organizes the Alexandra Rose Day collection, and receives the collections of the students on Shrove Tuesday, and of various sports and entertainments efforts.

2. *The Hospital Saturday Fund*, on the other hand, collects weekly contributions from the workpeople of Manchester and Salford and district in aid of local hospitals and to support its three fine convalescent homes at the seaside. Its annual income has risen to £40,000, and its scheme is to divide equally between hospitals and its convalescent homes up to £20,000 of its income, and 85 and 15 per cent. respectively of any income above £20,000. Until quite recently the amount collected by this fund was only about £20,000, which compared very unfavourably with the sums found by the working classes in some other towns in 1927, which are set out in the accompanying table.

Town.	Total Ordinary Expenditure.	Total Ordinary Income.	Workpeople's Contributions.
	£	£	£
Birmingham ...	275,501	263,100	48,741
Glasgow	375,454	359,502	85,805
Leeds	132,653	115,398	39,867
Leicester	79,295	86,202	27,384
Newcastle	124,471	120,643	46,716
Sheffield	135,.75	133,881	87,399
Sunderland	51,762	52,701	28,160
Liverpool	217,576	213,743	16,378
Manchester	350,000	320,000	20,000



Photograph by] SALFORD ROYAL HOSPITAL. *[Allied Newspapers, Ltd.*

The organization for collecting the workpeople's contributions in Manchester and Salford is much more efficient now than it used to be, and with proper representatives on the committees of the recipient hospitals there is a better prospect of this fund becoming as worthy of our district as that of Sheffield is of its neighbourhood. It would be interesting to hear the experience of hospitals receiving so much workmen's support on the admission of patients: whether a right is claimed for treatment by subscribers irrespective of the urgency of their ailments as compared with the urgency of the ailments of the non-subscribing voluntary hospital patient.

Manchester Royal Infirmary.

The Manchester Royal Infirmary is the premier hospital in the district, both in length of service to the sick and in its extent. The small "cottage" in Garden Street, in which it began its life, is still standing, almost in unchanged state, in a wilderness of modern buildings which tower over a narrow canyon of a street still, in name, reminiscent of horticulture in bygone days. Its staff was one matron, one maidservant, one porter (an unruly one too), with 75 in-patients in the first year. From this garden plot, with various transplantations and graftings, has grown the present Royal Infirmary with its 750 beds, 23 resident medical staff, 233 nurses, 21 porters, 141 domestic servants, and 8 administrators; and its 13,000 in-patients.

It was founded by Charles White, a remarkable gynaecological surgeon, who, in 1773, said nearly all that matters about the nature of puerperal fever, and the means to be taken in its prevention—three-quarters of a century before Semmelweis said much the same. White published other original matter which is referred to in other writings. Medical students were admitted to the hospital in 1758 as apprentices, and this was the beginning of our present medical school.

The main building of the present Royal Infirmary is situated one and a half miles from the site of the building in Piccadilly, which was the centre of the clinical interest of the last meeting of the Association in Manchester in 1902. The land on which it stands was provided by the Whitworth trustees through the University, and was the most suitable space large enough not only for doubling the accommodation provided at Piccadilly for patients, and for the modern laboratory means of diagnosis and treatment, but also for the needs of the large number of medical students who attend there.

It is built on the pavilion plan, with eleven blocks for patients—four for medical and seven for surgical cases—with, in all, approximately 600 beds. Much opposition was made to removal from the centre of the town, where it had as fine a site as any hospital could wish for, and where it was before the eyes of the public and of all potential subscribers and benefactors; and it was only on condition that a central branch hospital should be erected close to the old site to deal with the numerous accident cases that the trustees consented to the main hospital being put on the south side of the town, somewhat remote from the scene of its 150 years' activities. Accordingly its Central Branch Hospital, with accommodation for 60 in-patients as well as for dealing with accidents, was built in Roby Street, close to London Road Station, within 300 yards of the Piccadilly site.

Ever since 1758 medical students have received their undergraduate clinical instruction (except in midwifery and, this century, in fevers) at the Royal Infirmary. Women students are admitted for their training. Whilst all the undergraduate teaching is carried out at the Royal Infirmary, most of the other hospitals take part in the postgraduate teaching which is arranged by the University.

The Barnes Convalescent Hospital at Cheadle, Cheshire, with 132 beds, affords a great relief to the overworked parent institution, inasmuch as suitable surgical cases can safely be removed there by ambulance after operation before they are fit for treatment at home.

A fourth hospital belonging to the Royal Infirmary trustees is the Cheadle Royal Mental Hospital. It provides accommodation in two large main buildings and several villas for 300 patients, and stands in its own grounds of two hundred acres. All patients pay according to their accommodation, and any surplus of income over expenditure is invested in further improving the hospital and in caring for the needs of the patients.

The Royal Infirmary has suffered for some years from want of space for its nurses and domestic staff, but it is actively meeting this need by building a new nurses' home in York Place, a quiet backwater off the main road, and in immediate contact with the present Infirmary grounds.

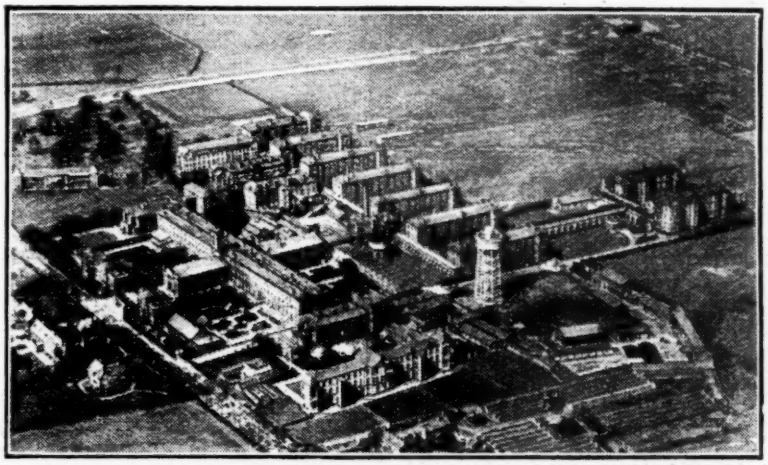
Adjoining the Royal Infirmary, and all on a plot of land about 400 yards square, are the St. Mary's and the Royal Eye Hospitals, the Christie Cancer Home, and the public health and pathological laboratories of the University.

St. Mary's Hospitals for Women and Children (281 beds).—This is the next oldest charitable foundation in the town, the hospitals being founded in 1790 by Charles White and the three Jacobite surgeons—the Halls, father and two sons. Charles White, like many another strong man, liked his own way, and when he could not get it in a quarrel with the trustees of the Manchester Infirmary in 1790, with his followers he crossed his Rubicon—the Irwell in this case. But, instead of advancing on the enemy, he retreated into Salford, and there founded

a rival hospital called the Lying-in Charity, which eventually developed into the present St. Mary's Hospitals. The seceders took a private house, and began attending for the delivery of poor women at their own habitations and for giving them advice and supplying them with medicines. The hospital met a need, moving from time to time to larger premises, and finally amalgamated with the rival Southern Maternity Hospital. In its two fine buildings it now carries out the good work which arose out of an ill breeze. The maternity work of the hospitals, practical and educational, is carried out in the Whitworth Street Hospital. The High Street Branch, adjoining the Royal Infirmary, was the result of the absorption of the rival Southern Hospital, which a large sum of money from Mr. Manasseh Gledhill induced. It is reserved for gynaecological work and for diseases of children.

The Royal Eye Hospital (148 beds) has over a hundred years of work to its credit. It adjoins the Royal Infirmary with a private doorway between the grounds of the hospitals. By arrangement, all eye cases going to the Infirmary that require in-patient treatment are dealt with in the Eye Hospital, and the Infirmary takes over suitable cases from it for in-patient treatment.

Ancoats Hospital, in about the most thickly populated and most unhealthy part of Manchester, was founded in 1827. It is in the centre of a district in which are some of the largest and finest cotton mills of the world, and many engineering works, and it struggles manfully with its heavy accident and general work. A handicap in the matter of financial support is the fact that it is not on any main road where it can be seen by potential subscribers; but in spite of this it is well supported by employers and others, and its income is well up to, if not above, expenditure. Several generous benefactors have provided funds for necessary extensions and for a fine convalescent home in Cheshire. Special attention is paid to orthopaedic surgery in its children's ward.



WITHINGTON POOR LAW HOSPITAL, WITH PAYING WARDS IN THE FOREGROUND.

The Victoria Memorial Jewish Hospital (62 beds) is situated in a quarter of the town in which many Polish and Russian Jews live, and, whilst it specially meets the needs of its own race, is non-sectarian and admits patients of any creed. It is the youngest of our general hospitals, having been founded as recently as 1904.

Salford Royal Hospital has just completed its hundred years of work. It is well situated in a thickly populated district on the broad highway to the North and on a good open site. The extent of its work can hardly be fully gauged even by its handsome frontage, for it has 263 beds in wards out of view from the main road. It is the only voluntary hospital for a town of 250,000 inhabitants, whilst Manchester, for three times the population, has fifteen, a fact which shows how closely the two towns are associated in common interests. The Manchester hospitals receive many Salford patients. A genito-urinary department is a special feature of Salford Royal's general service.

The Royal Children's Hospital, Pendlebury (220 beds), thus best known, is another hundred-year-old institution. The busy out-patient department is in a congested district of Manchester, but all cases needing in-patient treatment are sent to its fine hospital four miles out of town to the north, and in what is at present an open district. Town-planning schemes are, however, likely to close in on it, but in its breezy situation it cannot be harmed to any great extent.

The Ear Hospital (24 beds) has been in existence for seventy-five years. It is situated a mile to the south of the centre of the town, and is rather out of sight. It sadly needs funds for the building of premises more worthy of the work it does than those it now occupies.

The St. John's Hospital for Diseases of the Ear (11 beds) is of much more recent foundation. It is in St. John Street, in the centre of the town.

The Northern Hospital for Women and Children (73 beds) carries out its work in a thickly populated quarter of the town much favoured by the Jewish race of hospital class. Its present accommodation is inadequate for the needs of the hospital, and plans are prepared and subscriptions being sought for a new building to be erected on land a mile further to the north of the present institution.

The Manchester Babies' Hospital (80 cots), founded but fifteen years ago, is the infant charity of the town. It well meets a great need, and is thriving on adequate financial sustenance. The Manchester Corporation fosters 30 of its 80 cots.

The Hospital for Diseases of the Skin (54 beds) was founded in 1884 to take over the out-patient treatment of diseases of the skin from the Manchester and Salford Lock and Skin Diseases Hospital, founded in 1818. It has ever been an advancing institution. In 1901 it opened a department for treatment by Finsen light and x rays, being the first hospital in England, after the London Hospital, to do so. Its present handsome building in the centre of the town was opened in 1906. About 10,000 new patients, with over 70,000 attendances, are seen yearly from all over the neighbouring districts.

St. Luke's Hospital (39 beds) is the present representative of the hospital from which the above-mentioned hospital developed for diseases of the skin It is an approved institution under the Public Health Regulations (1916), and is the chief hospital for the treatment of venereal diseases in the district. The general hospitals of the towns also have special venereal diseases clinics under the same regulations.

The Hospital for Consumption and Diseases of the Throat and Chest (155 beds) was at the date of its foundation (1875) one of the few hospitals in England devoted to the treatment of consumption. It has an out-patient department in the centre of the town, a hospital at Bowdon, Cheshire, and the Crossley Sanatorium at Delamere, Cheshire. It has a working agreement with the Manchester Corporation for the treatment of tuberculosis. Some of the honorary staff receive remuneration for this public health work.

The Christie Cancer Home (34 beds) and the *Radium Institute* (2 beds) work closely together in the treatment of malignant disease, and there is a prospect of amalgamation of the two institutions, with full recognition of the generosity of the late Sir Edward Holt in making the Radium Institute possible.

The Dental Hospital is situated close to the University, with which it is closely affiliated for teaching purposes. It has no beds, but a large out-patient department at which over 12,000 persons attend yearly.

Two small but very valuable hospitals, not supported by voluntary subscriptions, may be referred to.

The Gaskell Memorial Home, which was established in memory of the daughters of Mrs. Gaskell the novelist, and which provides nursing home accommodation at a cost of 3 guineas a week.

The Stretford Practitioners' Hospital, for the care of patients of moderate means, is administered by the local profession on lines approved by the British Medical Association. Though it has been in existence only a few years, it is extending its successful activities as rapidly as income will allow.

Lack of space prevents reference to other institutions situated away from the town; these will be noticed in the *Book of Manchester*.

THE CORPORATIONS' HOSPITALS.

The medical officers of health of the two towns have large hospital accommodation under their supervision for infectious and tuberculous diseases. In Manchester there are:

1. *Monsall Hospital* (600 beds) for infectious diseases, and *Clayton Vale* (60 beds) for small-pox.
2. *Baguley Sanatorium* (330 beds) for intermediate and advanced pulmonary tuberculosis.

3. *Abergele Sanatorium*, with at present 50 beds for adults and 10 for children in early stages of tuberculosis. Plans are prepared for extension to accommodate 210 more patients with pulmonary or non-pulmonary tuberculosis.

4. *Crossley Sanatorium, Delamere*. By arrangement with the Manchester Hospital for Consumption 80 beds are retained for pulmonary tuberculosis.

Other non-pulmonary tuberculosis cases are sent to special hospitals at Oswestry, Frimley, and Barrowmore (in all about 200 beds).

In Salford there are:

1. *Ladywell Hospital* (300 beds): 224 of the beds are for infectious diseases, and 66 for advanced pulmonary tuberculosis.

2. A small-pox hospital at Prestwich with 44 beds.

3. *Nab Cop Sanatorium*, Marple (120 beds), for early tuberculosis.

4. A municipal maternity home and babies' hospital, with 10 beds for mothers and 18 cots for babies.

UNION HOSPITALS.

The large union hospitals play a very important part in our modern life. They have all the modern facilities for scientific laboratory diagnosis, for electrical, artificial light, sunlight, and massage treatments, and in addition to their permanent staff are visited by consultants for all special ailments, who receive honoraria varying in amount according to the work done by them. The Manchester hospitals have wards in which paying patients are treated and visited by practitioners of their own choice, and for whose payment they are responsible. These beds meet a great need, and are well occupied, especially for surgical work.

At the *Crumpsall Infirmary* a whole pavilion of six wards (100 beds and 60 cots) is devoted to maternity, ante-natal, and post-natal work, in which over 1,000 births are dealt with annually. In addition to provision for massage and electrical treatment a new wing, opened in 1927, has three operating theatres, two of which, with the anaesthetizing room, are lined by vitrolite. The daylight from the domed ceilings enters from the north; artificial light is provided by a scialitique lamp in No. 1 theatre, and a "no shado" lamp in No. 2 theatre. No. 3 theatre has dark panelling for its walls, and dark blinds to its windows, so as to be utilizable as a dark theatre for special cases. The flooring in all the theatres is of rubber, and the equipment generally is of the most modern description. The three theatres are arranged around a vestibule at the end of the building, and large doors give easy access from one to the other or to the vestibule.

At *Booth Hall* a special feature is the provision which is made for the treatment of children with heart disease.

In Salford 1,000 beds are not enough to meet the demands of the Poor Law hospital patients, and further accommodation is to be provided.

PAYING PATIENTS.

The need for beds in hospitals fully equipped for all modern methods of investigation and treatment is being more and more felt in England. Their success has long been demonstrated in America. It seems rather anomalous that the hospital class of patient should be better provided for in this way than those who subscribe to the hospitals and can afford to pay moderately or even well for a similar proper investigation of their ailments. In Manchester the following hospitals are meeting, with a greater or lesser number of beds, such needs of the better-class patient: the Royal Eye, St. Mary's, Ancoats, Consumption, Salford Royal, the Northern, and the Radium Institute.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION.

SECOND QUINQUENNIAL CONGRESS.

THE second quinquennial congress of the Medical Women's International Association was held in Paris from April 10th to 15th, and was attended by some 270 medical women, representing the following countries: Austria, Belgium, Bolivia, Canada, Denmark, France, Germany, Great Britain, Hungary, India, Italy, Japan, Norway, Poland, Spain, Sweden, Switzerland, United States, and Jugo-Slavia.

During the course of the congress the delegates visited various hospitals and institutions, including the Clinique Baudelocque (Maternité), the Hôpital de la Salpêtrière, the Institut Pasteur, and the Institut du Radium de l'Université de Paris. Ceremonies of welcome and hospitality included a reception at the house of Madame Thuillier-Landry, a banquet given by the National Association of French Medical Women, a reception at the Palais du Luxembourg by M. Paul Doumer, president of the Senate, and at the Hôtel de Ville by M. Georges Lemarchand, president of the Municipal Council. By permission of the League of Nations all the meetings were held at the International Institute of Intellectual Co-operation. Great Britain was represented by thirty-five medical women from all parts of England and Scotland, and the very large attendance of French medical women bore witness alike to the progress of the Association Française des Femmes Médecins and to the increase of medical women in France during the last generation. When the association met in London in 1924 Lady Barrett was elected president, Dr. Jane Walker treasurer, and Miss Martindale honorary secretary, each for five years, this being the period prescribed in the constitution. Other British members of council taking part in the present congress were Dr. Catherine Chisholm, president of the British Federation of Medical Women, and Dr. Letitia Fairfield. Officers elected for the quinquennium 1929–34 were Madame Thuillier-Landry (France), nominated as president, on the proposal of the American and British delegates, and six vice-presidents chosen from the following countries: Great Britain (Lady Barrett), United States (Dr. Tayler-Jones), Germany (Dr. Salzmann), Norway (Dr. Dagny Bang), Italy (Dr. Carcupino Ferrari), Jugo-Slavia (Dr. Nechkovitch Voutchetitch). For the convenience of the president it was decided to maintain the office in Paris during the next five years.

Open sessions of the association, at which the subjects for discussion were sex problems for children and adolescents, and analgesia in midwifery, were formally opened by the Rector of the Paris Academy, to whose speech expressing cordial appreciation of the work of medical women Madame Thuillier-Landry replied on behalf of the International Association. The director of the International Institute of Intellectual Co-operation, welcoming the congress in the name of the League of Nations, emphasized the importance of woman's work in connexion with the League.

Sex Instruction.

At the sessions dealing with sex instruction for children and adolescents Miss Martindale (British Rapporteur General) presented her report summarizing fifteen papers on this subject submitted from Denmark, Germany, Great Britain, New Zealand, Norway, and Sweden, in reply to a questionary which had been sent out from the central office some months previously. Papers from Great Britain were contributed by Dr. Catherine Chisholm, Dr. Letitia Fairfield, Dr. Scoresby-Jackson, Dr. Octavia Wilberforce, and Dr. Lilian Wilson. Similar papers from France, Italy, Hungary, Poland, Switzerland, and Jugo-Slavia were epitomized in a report submitted by Madame Montreuil-Straus, the French Rapporteur General. Following a discussion, in which Great Britain was represented by Dr. Letitia Fairfield and Dr. Doris Odlum, the congress formally adopted the conclusions as summarized by the rapporteurs. Briefly these conclusions are as follows:

1. That sex instruction in some form should be given, though preferably not under that name.
2. That to very young children elementary sex instruction should be given by parents.
3. That during school life biological teaching concerning the facts of reproduction should be included in the routine teaching of nature study.
4. Arising out of 2 and 3, that parents and teachers should themselves be educated in sex matters.
5. That inasmuch as physiological knowledge, however wisely imparted, does not necessarily influence conduct, sex education of adolescents should be supplemented by instruction in ethics to ensure control of the instinctive impulses and their subordination to a social ideal.
6. That it is the doctor's special function to deal with the pathological sides of the question—namely, to give advice as to treatment and care of difficult or abnormal children, and instruction on the subject of social diseases.

Analgesia in Midwifery.

The reports on analgesia in midwifery summarizing the papers sent in from various countries were presented by Dr. Kunckel of Germany and Dr. Nechkovitch Voutchetitch of Jugo-Slavia; Great Britain had contributed papers by Dr. Lily Baker, Miss Basden, Miss Bloomfield, Dr. Janet Gray, Professor McIlroy, and Dr. Joan Rose. Among the anaesthetics discussed were chloroform, ether, nitrous oxide, lumbar anaesthesia, twilight sleep, pernocton, avertin, and somnigen. In the published reports the view was expressed that "at present no absolutely safe anaesthetic is known to us, and it would be the task of obstetrical science to discover one." Dr. Clara Kary (Berlin) mentioned the method favoured by most of the English authors—namely, morphine for the initial stages, followed by *narcose à la reine* during the birth of the head. Miss Lily Baker (Bristol) recommended, in addition to morphine, the use of omnopon and heroin, and, if possible, scopolamine and atropin. In operative cases she advocated the use of ether, and, only when this is contraindicated, lumbar or sacral anaesthesia, or nitrous oxide and oxygen. Dr. Janet Gray (London) favoured chloroform, or a mixture of opium, bromide, and chloral hydrate, or chloral hydrate in the first and chloroform in the second stage of labour. Miss Alice Bloomfield (London) stated that the intermittent administration of chloroform to the so-called "obstetrical degree," with a deepening of anaesthesia at the actual time of birth, is the method of choice and general usage in England. Professor Louise McIlroy held that the best analgesics for the first stage of labour were morphine and its derivatives, in conjunction with, and later replaced by, small doses of scopolamine. She had also found chloral hydrate, bromide, and adrenaline useful. For the second stage she recommended nitrous oxide and oxygen as the best anaesthetic. She stressed the importance of administering to the patient the appropriate psychological suggestion, and emphasized the need for establishing in the patient complete confidence in her medical attendant, who should promise her relief from pain in so far as this was possible and consistent with safety for herself and her child. The discussion on the report was opened by Lady Barrett, who was followed by Professor McIlroy, Dr. Bertha Van Hoosen, and other delegates.

Belgium.

[FROM AN OCCASIONAL CORRESPONDENT.]

The League of Mental Hygiene.

A MENTAL hygiene league was inaugurated in Belgium in 1922; it has several provincial sections. The special dispensaries which have been opened co-operate closely with the mental hospitals and with the courts of justice. They constitute, moreover, centres for the supervision of mental cases, and these patients are no longer left to such help as may be given by voluntary associations. Mental hygiene is a vast subject, and includes in its survey such different departments as education and medical treatment. The dispensary assumes primary responsibility for procedures such as investigations of the family history and social circumstances, which in the hands of less experienced workers involve serious expenditure of time. Thanks to the dispensaries medical officers of mental hospitals are reasonably assured that a patient thought to have been cured can go back to a favourable environment, continuing to attend a dispensary for as long as is thought necessary. Only since November, 1926, has the treatment of mentally deficient children been conducted at the dispensaries; the problems which it presents are at times social as well as medical. Three stages have to be considered in this respect. There is firstly the period before the child goes to school; it is a time of adaptation to life in which it is occasionally necessary to intervene very actively from the prophylactic point of view. Such children present a minimum of mental symptoms, except when the graver mental abnormalities are present, and physical signs are relatively much more prominent. The second stage is that of school life, when the child has to adapt himself to this particular environment, and intellectual progress is concerned. The disorders which come up for treatment are now fully developed. The third stage is the post-educational one of adaptation to social life; it is also the stage of delinquency. As regards the selection of these cases the children are brought by their parents, by the health workers in schools and industrial organizations, or by the judicial authorities of children's courts. One of the chief advantages of the system is that very often these children can remain in the family circle, with moral and material benefit, apart from what the hospital or dispensary can give. The part played by these mental hygiene dispensaries in dealing with delinquents is of similar importance.

Health Administration in the Belgian Congo.

The health department of the Government of the Belgian Congo has just published an interesting and very detailed report on the results achieved by the new medical administration, which came into existence in 1922, and was characterized by the concession of autonomy and the creation of provincial medical services. In framing its organization advantage was taken of the experience gained in these matters by the parallel British and French administrations, and the distinctive principles of both have been combined in the Belgian scheme. The British policy is to establish treatment centres to which patients are brought; in this way medical aid is provided for the greatest possible number of those suffering from all varieties of diseases. The French plan utilizes the native medical service; it aims at hunting out the various endemic and epidemic diseases and at the promotion of health measures in the various centres of population. In 1925 the Belgian Government medical officers were solely responsible for the treatment in hospitals and dispensaries of 85,000 cases of trypanosomiasis, 10,045 cases of syphilis, and 33,754 cases of yaws. The steady increase in the financial commitment of the colony in connexion with improvement of the general health is shown by the following figures, which indicate the sums devoted to the provision of drugs and equipment. An expenditure of 250,000 fr. in 1914 rose to 562,000 fr. in 1919; to 2,250,000 fr. in 1921; to 3,400,000 fr. in 1922; to 4,600,000 fr. in 1923; to 9,000,000 fr. in 1925; to 70,000,000 fr. in 1928; and to an estimated 79,000,000 for the current year. Vaccination against small-pox has been a primary concern of the Government since a vaccination service was inaugurated in 1895, and all natives were required to come for periodical re-vaccination. Lymph prepared locally was found to be ineffective, and, consequently, large supplies have since been sent regularly from Brussels. Great benefit followed the introduction of a dried vaccine which gives excellent results but imposes a very heavy financial strain. The outstanding disease as regards Europeans is malaria with its complications; an antimalarial association has been started at Elizabethville, and a second one at Leopoldville. Trypanosomiasis is certainly the most severe of those diseases which ravage the native populations of the Congo; it has been made the objective of an intensive campaign, the history of which is detailed in the report. The total number of sick persons traced, examined, and treated is very high; many leper asylums have also been built. Among other matters the report discusses the work of rural dispensaries, training colleges for native medical assistants, schools for native midwives, child welfare, and medical charities for the native population. As regards the medical staff there are actually 135 medical officers on the official register of the colony; the various industrial organizations are responsible for the addition of about 130 other medical officers.

A New Degree in Anthropology.

The University of Liège has instituted a diploma and a doctorate in anthropological science. The qualifying studies comprise (1) physical anthropology, (2) human anatomy, (3) general and special human physiology, (4) ethnography and ethnology, (5) human geographical distribution, (6) the principles of sociology, (7) the elements of the science of language, (8) human palaeontology, (9) prehistoric archaeology, (10) geology of the Quaternary Period.

England and Wales.

Dinner to Lord Moynihan.

ON April 19th the University of London Medical Graduates' Society gave a complimentary dinner to Lord Moynihan, P.R.C.S., at the Hotel Metropole, Leeds. The guest of honour was accompanied by Lady Moynihan. Sir StClair Thomson, president of the society, was in the chair, and in his speech proposing the health of the guest mingled a vein of playful badinage with terms of sincerest admiration. He drew a picture of Lord Moynihan as the great teacher and inspirer of the young surgeon, always ready to show the minute details of his wonderful craftsmanship. The whole profession was under a deep obligation to him, and this not only because he encouraged others to aspire to a great tradition, but, by the charm of his culture and the width of his interests, he had shown that a medical man was not necessarily a mere "pill-monger" or a "sawbones." Truly, Lord Moynihan had raised the status of the profession throughout the world. The toast was drunk with great enthusiasm. Lord Moynihan, who was greeted with cheers on rising to reply, said, in banter, that all his life he had been endeavouring to chase, but without ever catching up with, the defects of belonging to the University of London; for the university in his day was not a university at all in the strict sense, but merely an external examining body. In his view a university was not primarily a place at which to acquire knowledge, though this was often regarded as its chief function. Much more vital was the impact of mind upon mind among undergraduates, the collision of differing temperaments, and the moulding of a shapeless, plastic mass into something capable of being recognized as a crystal of many facets. Speaking of his peerage, Lord Moynihan said he had been overwhelmed by the friendliness of the acclamation that had come from all over the world. This acclamation, he realized, was not relevant entirely to himself, but was an honour to the profession as a whole, and, in interpreting this honour, he would use it to the utmost of his power for the good of the profession and all it stood for. Dr. Rhoda Adamson of Leeds, to whom the success of the dinner was in great measure due, in a few happy words in appreciation of Lady Moynihan, proposed her health, to which the company very heartily drank. The dinner was a very influential one, no fewer than twelve cities and towns having sent representatives. Among those present were: Mr. A. Richardson, Mr. C. Oldfield, Mr. H. Collinson, Dr. R. A. Veale, and Mr. A. L. Whitehead, of Leeds; Mr. Harry Platt of Manchester; Professor W. Blair Bell of Liverpool; Professor W. Billington of Birmingham; Dr. W. Edgecombe and Dr. W. B. Watson of Harrogate; Mr. J. H. Cobb and Mr. E. F. Finch of Sheffield; Mr. E. M. Hainworth of Hull; Dr. Dorothy Hare, Mr. W. McAdam Eccles, and Mr. Herbert Tilley from London. The University of London Medical Graduates' Society is steadily increasing its membership, and now has a large number of graduates overseas as members. The annual London dinner will be held on Tuesday, May 7th, at 6.45 p.m., at the Langham Hotel, before the reception that evening to the members of the International Congress of Military Medicine and Surgery.

Extension of the Guest Hospital, Dudley.

The board of management of the Guest Hospital at Dudley are appealing for £50,000 for the enlargement and equipment of this institution, which was founded in 1871. In order to obviate interference with the working of the hospital during the reconstruction it is proposed that the extension should be conducted in four stages, the first of which is the provision of a ward unit with two stories, and accommodating twenty-four beds and three single-bed wards. The next stage will be the replacement of the old laundry and boiler house by a new one; subsequently a further ward unit of two stories will be built, and certain portions of the existing hospital will have to be remodelled. In connexion with this extension scheme an illustrated pamphlet has been issued describing the development of the hospital. It is recalled that the present buildings were made available by the late Earl of Dudley for the accommodation of workers who became blind in limestone pits; they were originally designed for almshouses, though never used as such to any extent. They were altered by the late Earl of Dudley to serve as a hospital, and endowed by the late Mr. Joseph Guest, who presented £20,000 for this purpose. In 1912 the out-patient eye department of the Dudley Dispensary was transferred to the Guest Hospital, and it is mentioned that during the last five years there have been over 52,000 attendances of ophthalmic patients at the out-patient department and 2,000 cases admitted to the wards. The x-ray department has recently acquired additional plant at a cost of £500. The Guest Hospital is situated in a densely populated industrial area, and its resources have been severely taxed in recent years by the increase in the population and of the number of road accidents. During 1928 over 2,000 patients were treated in the wards, and there were more than 55,000 out-patient attendances. There is a long waiting list, but it is hoped that the extension, which will eventually add eighty-five beds to the hospital, will enable it to deal more adequately with the local requirements.

Royal Westminster Ophthalmic Hospital.

A report has been issued on the first three months' working of the private paying rooms at the Royal Westminster Ophthalmic Hospital, which were opened in the new building in Broad Street, Holborn, on January 1st of this year. The average stay has been three weeks, and the average cost to the patient £15 15s., exclusive of the surgeon's fee, which is a matter of private arrangement between himself and his patient. Only in one case was it necessary to charge a small additional fee for the services of a special nurse. All the other cases were nursed entirely by the hospital's private nursing staff working under the supervision of two resident medical officers. Fourteen of these private rooms are available at the hospital. They are all single rooms, and the paying wing is entirely cut off from the public wards, having its own theatre, kitchen, and sitting-room.

Scotland.

Small-pox Outbreak in Glasgow.

AN outbreak of small-pox originated on board the Anchor liner *Tuscania* on her homeward voyage from Bombay. Seven members of the crew were landed at Glasgow and confined in Robroyston Hospital; the authorities have kept under observation in the city some 300 persons who travelled on the ship and are possible contacts with infected cases, while the 600 passengers who were landed at Liverpool and Glasgow are also being watched by health authorities in various parts of the country. Arrangements were made, after the cargo of the liner was discharged, to fumigate the whole ship. A large supply of vaccine lymph had been taken on board at Marseilles, and every person on board had been vaccinated. Up to April 12th the number of patients in hospital affected by small-pox was 13, of whom 12 are members of the crew and 1 a passenger. The disease appears to be of a severe type in several cases. On April 15th there were 18 cases in Robroyston Hospital, and 1 case was subsequently admitted to the Aberdeen City Hospital, suffering from small-pox. So far as Scotland is concerned, however, vaccination and tracing of contacts appear to have successfully controlled the outbreak.

Livingstone Flag Day in Scotland.

Arrangements have been made to hold a flag day in Edinburgh, Glasgow, and other Scottish towns on April 27th, for the purpose of raising funds in connexion with the memorial to Dr. David Livingstone, the African explorer. The memorial and museum are to be set up at his birthplace in Blantyre, Lanarkshire, and will be opened early in July of the present year. It may be recalled that the explorer qualified in medicine and took the licence of the Faculty of Physicians and Surgeons at Glasgow in 1840, and that during his travels he took much interest in methods of medical treatment applicable to tropical regions. His journals record many observations on the uses

of various drugs and other medical procedures. In the middle of the nineteenth century, when the use of the clinical thermometer had not yet become one of the commonplaces of medicine in connexion with fever, Livingstone made extended observations with this instrument, using the ordinary thermometer both for taking atmospheric temperatures and that of patients. His advocacy of the wet pack contributed to the more general adoption of this method of reducing high temperature. In regard to febrifuges, he noted several plants which were in use in Africa in place of quinine, and which might be used when the latter drug was not available. He is generally credited with having been one of the first persons to point out that the action of quinine was greatly helped by the previous administration of a powerful purgative, using for this purpose a "rouser" containing 8 grains of jalap resin, 8 grains of rhubarb, and 3 grains each of calomel and quinine.

Edinburgh Dental Hospital and School.

The thirty-seventh annual meeting of the Edinburgh Dental Hospital and School was held on April 18th. Dr. William Guy, dean of the school, presided. The report shows that there were 112 students attending the hospital, and that during 1928 21,977 operations were performed. The total income was £4,975, of which £2,791 went to the school and £2,184 to the hospital, leaving a balance of £665. It was pointed out that they had not yet reached the limit of the increased expenditure occasioned by extensions to the school, and that, though the finances were entirely satisfactory, it was not yet possible to forecast accurately what the future would be. Mr. J. B. Clark, who moved the adoption of the report, pointed out that more than half the total number of operations had been undertaken for preservation of the teeth, and that the hospital was making an enormous contribution to the maintenance of the good health of the community. In the course of the history of the school, about 850 highly qualified dentists had been turned out. He believed that if the public realized the great contribution that this hospital made to the health of the community it would receive more ample support, so that a larger part of the fees of students could be released for increasing and extending facilities for teaching.

Ireland.

Ireland's Freedom from Small-pox.

THE Secretary for the Department of Local Government and Public Health, in a recent statement in connexion with small-pox, claims there is a complete absence of the disease in Ireland, which he attributes to the enforcement of compulsory vaccination. He announced that the department had for a long time anticipated the appearance of small-pox. In 1923 a memorandum was issued summarizing the measures for promptly dealing with any case that might arise. The questions of infection, supervision of contacts, vaccination, and re-vaccination were all discussed in detail, and these instructions were very familiar, both to medical officers and boards of health throughout the country. All medical practitioners were warned to communicate immediately with the local medical officer of health if there was the slightest suspicion of any case of small-pox. Hitherto time had been lost in some instances by mistaking chicken-pox for small-pox. On the general question of vaccination, it was added, local authorities were most diligently carrying out their duties. The department was most anxious to keep a clean bill of health as regards small-pox, a vital matter in a country which exported foodstuffs, and was undeniably an ideal tourist resort. There had been no outbreak for many years, and the department was fully satisfied that the present organization could cope with any emergency. Dr. Angela Russell, wife of the Dublin medical officer of health, in a health talk on small-pox, which was broadcast recently by 2 R.N., referred to the outbreak on the s.s. *Tuscania*, and the fact that one of the contacts was a Dublin man. Some people, she said, had begun to think that it was harmless because of the mildness of the disease in England since the war; they imagined it had lost its virulence, and they neglected vaccination of their infants to ward off what appeared a mere bogy, because it would entail inconvenience to themselves. Small-pox, she pointed out, was as fatal a disease and as great a scourge to-day as it had ever been. If the people on the s.s. *Tuscania* who had been attacked by the disease had been vaccinated within the last few years not one of them would have been affected. The disease was as common long ago as measles to-day, and the reason it had virtually died down was the practice of vaccination, the one and only preventive and cure for the disease.

The Mosquito Nuisance.

The Public Health Committee of Belfast, having considered the nuisance caused by mosquitos and other insects, has issued a statement, signed by Dr. C. S. Thomson, superintendent medical officer of health, giving the following advice. A vacuum machine is useful to destroy the hibernating female in rooms and outhouses. Burn the contents of the bag; do not put them in the dustbin. Fumigation and the limewashing of walls is also valuable. Pools and puddles should be drained and filled up, and choked-up gutters attended to. For small areas a pneumatic sprayer could be used for spraying casual water with paraffin oil containing 2 per cent. of castor oil. To prevent bites, oil of lavender on the hair or clothes may be tried. As the mosquito frequently bites about the ankles, two pairs of thin socks or stockings are better than one thick pair, and Russian or Wellington boots should be worn in the garden. To protect the face use a 50 per cent. alcoholic solution of thymol, or oil of cloves in lanoline. If bitten, dab on at once a weak solution of ammonia or of washing soda or common soap and vinegar, or apply a cut onion to the sore. If the irritation is severe apply iodine in glycerin. Call a doctor if matters get worse.

Correspondence.

THE DISTRIBUTION OF RADIUM.

SIR,—The issue of the report of the Radium Subcommittee raises in an acute form the problem of the distribution of radium throughout the country, and the question as to whether it is better to distribute radium broadcast to all those who would like to make trial of its use or to concentrate it in centres specially equipped for its service. At the present time the former plan has been adopted, and every hospital throughout the country is fighting for supplies, in the full conviction that if a surgeon only possesses radium he can cure cancer, and in utter disregard of the skill and experience required for its successful use. It is surely high time that someone should utter a warning against the folly of such a policy, and should point out the dangers involved in the inexpert use of this most powerful weapon. Should such a policy still be pursued with the large amounts of radium which will shortly be at our disposal it can only result in disaster and discredit.

If any progress is to be made in the treatment of cancer by radium it is surely essential that it should be concentrated in certain centres, and not distributed broadcast. Four such centres in London, four in the provinces, and one in Scotland ought to be sufficient, although some of them might perhaps be divided for convenience in working. Only in this way can sufficient cases of the same kind be brought together to try out different methods of use, a staff of sufficient experience be assured, and accessory apparatus, such as powerful x-ray plants, be available. Each centre should be under one director, who would co-ordinate the work done, and who would have under his control, so far as the treatment of these particular cases is concerned, the whole resources of the centre. The centre would probably be situated in a large hospital, but I do not at all mean that cases should be withdrawn from the care of all other members of the staff and handed over to the director of the centre. Those in charge of the cases would, however, only have access to the resources of the centre in so far as they were willing to act in conjunction with the director, and to place the whole of the notes of their cases unreservedly at his disposal. He, on his side, would see that

they were provided with radium in forms and amounts suitable to the cases, and would advise as to dosage and methods of treatment. This would obviously introduce into hospital work an entirely new element, but the circumstances most certainly demand it.

Around each centre there ought to be subsidiary centres, which would be visited on stated days by experts from the centre itself, and where the local practitioners might have an opportunity of consulting an expert as to the treatment of their cases. This would save fruitless journeys for patients, and would prevent the centre from being crowded with unsuitable cases. It would also make for the early recognition and admission of cases of cancer. The system is at work in France, and is very successful.

At certain of the centres, perhaps at all of them, there should be an installation for the preparation of radium emanation, and perhaps for its supply to selected individual surgeons in the subsidiary centres. Although its use demands the same precautions as that of radium itself, it has the great advantage that it is only of transient value, and that its loss is a matter of small importance. I hold strongly that in no circumstances whatever should any of the radium itself be moved from the centre, as the risk of its loss is considerable. With suitable adjustments precisely the same results can be obtained with emanation, the use of which is in many ways advantageous. In contrast to the views held abroad, I am personally of the opinion that the whole future of radium treatment lies with emanation, from its great convenience and safety, whilst in many cases the fact that it need not be removed after introduction is of vital importance.

At every centre arrangements must be made for the admission and treatment of private patients. It would be intolerable that any individual should be debarred from the services of the centre because he was well off financially. In most cases it will be impossible, and most undesirable, that he should be treated in the centre by his private medical attendant, since we are here dealing with a highly specialized form of treatment, which can only be carried out satisfactorily by those who are constantly engaged in its application. This, of course, cuts clean across all our present ideas of medical practice.

It cannot be too strongly stated that the successful treatment of cancer by means of radium is a matter demanding the most expert knowledge, and that attempts to use radium without that knowledge are unlikely to succeed, and are exceedingly dangerous for the patient. Possibly years hence its use may be reduced to a standardized procedure, but at present we are in an experimental stage, where every consideration of wisdom and policy demands the utmost caution and the closest observation of results.—I am, etc.,

London, W.1, April 22nd. H. S. SOUTTAR.

INQUIRY INTO THE ETIOLOGY OF CANCER.

SIR,—In the *British Medical Journal* of June 16th last an appeal was made to your readers to help in a statistical research into the etiology of cancer by answering a schedule of questions relating to a cancer patient and a non-cancer patient of the same sex and about the same age as control.

The response to this appeal, though somewhat disappointing, was sufficient to justify printing the schedules and starting the investigation, and some medical practitioners have rendered most useful service by their careful work in completing these forms.

In order that sufficient data may be secured, more volunteers are needed, and since many of your readers doubtless did not see or give careful consideration to the first appeal, may I again ask that any who are in touch with cases of cancer, whether in general, specialist, or hospital practice, and who are prepared to devote a few hours to assist in this research, will communicate with me at the Galton Laboratory? Unfortunately it is not possible to offer any kind of remuneration for this service, but I feel sure that there are some who will be prepared to make this voluntary sacrifice of a little time to help in a form of cancer research which can only be carried out by team work.—I am, etc.,

PERCY STOCKS, M.D., D.P.H.,
Reader in Medical Statistics, University of London.

Galton Laboratory, University College, London, W.C.1, April 23rd.

POST-GRADUATE INSTRUCTION IN MIDWIFERY.

SIR,—In the recent discussion upon "The future of maternity services" one of the speakers stated that she "was not aware of any post-graduate facilities for the general practitioner, enabling him to take an intensive course."

During the last two years, St. Mary's Hospital, Manchester, has held such a course during the summer extending over a period of one week, and it is intended to repeat this for the third time commencing on June 15th of this year. There is accommodation for eight qualified practitioners to live in the hospital, and during this week each member of the honorary staff resides in turn in the hospital for twenty-four hours so that he is on the spot to attend to any maternity emergency and hold regular systematic classes.—I am, etc.,

Manchester, April 19th. WM. FLETCHER SHAW.

THE TREATMENT OF ACUTE OTITIS AT PUBLIC SCHOOLS.

SIR,—In the Journal of April 20th (p. 745) "M.D." asks some straight questions about this subject, and from me he shall have some straight replies.

I have seen a good many epidemics of influenza, but never have I seen one which attacked the middle ear so severely as the recent one. Adults as well as children have been the subjects of the attacks. I have no hesitation in saying that as soon as the patient complains of earache the membrana tympani should be examined at least night and morning; if it is injected, and more especially if bulging in the slightest degree, there should be no delay in paracentesis. If such early treatment is given the finding of serous pus only will be all the better and the operation justified. Such prompt treatment more often than not is a means of clearing up the affection altogether in a short time, besides which a punctured membrane is much more likely to heal than one which has been allowed to perforate on its own account and which so often results in a chronic discharge, with all its after ill effects.

As to pus in the mastoid antrum, it is just as unwise to leave these cases as it is to do so in acute appendicitis, yet there may be no signs externally, such as swelling or tenderness over the mastoid region. During the recent epidemic of influenza I have opened many mastoid antra, and in all pus was found; these were all cases where the membrane had been allowed to perforate. The difficulty in many of these cases is that one does not see them early enough; this may be due to the fact that the public, and possibly some practitioners, look upon them too lightly in the first instance.

Therefore the answers to both of the questions of "M.D." are in the affirmative.—I am, etc.,

Chichester, April 21st. ARTHUR M. BARFORD.

SIR,—The answer to "M.D.'s" query concerning the treatment of acute suppurative otitis media is in the affirmative, as he very rightly suspects. Nor should there be any waiting till the condition is suppurative, since an early incision in the full drum relieves the *retention pressure* and thus removes the chief factor in infection of any hollow organ. Organisms and infection thrive under pressure. Also the relief of pressure allows the swollen mucosa to subside, thus removing any dam to the antrum or attic contents (which are mucous in the early stages), and discouraging adhesions.—I am, etc.,

London, W.1, April 21st. C. HAMBLEN THOMAS, F.R.C.S.

SIR,—There can be no doubt that there would be fewer "running ears" and "mastoids," with their accompanying complications, if every "gathered ear" was adequately treated at the outset according to ordinary surgical principles—that is, by free incision of the drumhead. Surely it is time that every practitioner recognized the potential gravity of a suppurating ear.

Paracentesis means a "lapping of a body cavity." When applied to the tympanic membrane it is inadequate. There

should be a free and deliberate incision, commencing as high, and extending as low, as possible. The termination of the incision should be slightly curved so as to form a small flap to prevent too early regeneration. It is at the lowest part of every cavity that drainage is most efficacious. A straight incision is very apt to close too quickly. The myringotome should have a very keen edge. An inflamed membrane is acutely sensitive; therefore complete general anaesthesia is needed for precision. In adults I use gas and oxygen.—I am, etc.,

ARNOLD FERGUSON, F.R.C.S.Ed.,
Aural and Ophthalmic Surgeon,
Jersey General Hospital.

April 20th.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—My view that Professor Lyle Cummins's description of the lesion produced by the intracutaneous tuberculin test (April 13th, p. 707) is inaccurate is strengthened by the fact that in his own case the lesion as an induration lasted many weeks; the lesion is inflammatory, and not oedematous. No one but Professor Cummins could suggest that the lesion he describes indicates the need for treatment. No one who knows my work and views can accuse me of ever having relied upon the intracutaneous test for the diagnosis of tuberculosis in human beings; "as a criterion in diagnosis" with a view to treatment, I neither use it nor recommend it. I am a firm believer in the value of the subcutaneous method of Koch as a means of determining whether in a case of obvious infection specific treatment is wise.

The failures of the system carried out in hospitals and sanatoriums by physicians and tuberculosis officers are strikingly shown by the charts on my table, taken at random. There are 38 patients; 24 with tubercle bacilli in the sputum, 3 patients, sent by ophthalmologists, suffered from episcleritis proved by proper tests to be tuberculous, 1 case of phlyctenular conjunctivitis, 2 cases of tuberculous disease of the skin, 1 case of tuberculosis of a digital joint, 2 cases of pleurisy, diagnosed by tuberculin as tuberculous, and 1 case of severe haemorrhage (pints). Thus, out of 38 cases, 34 are certainly cases of tuberculosis needing treatment. There remain only 4 out of 38 in which the diagnosis could be doubtful. If Professor Cummins had seen these four cases before and after treatment he would hesitate to question my skill in diagnosis and treatment by means of tuberculin. I used Koch's method of diagnosis, and not the intracutaneous test.

In my first book, *Treatment of Consumption* (p. 70) (1908), I criticized the somewhat ancient statistics of Naegeli and Burkhardt, quoted by Professor Cummins. Naegeli's generalization was based upon post-mortem examinations of 391 hospital patients from the poorest parts of Zürich, of whom 110 died of tuberculosis; Burkhardt's generalization upon 1,262 patients of the industrial classes, of whom 466 died of tuberculosis. These statistics show that in the hospitals studied *one death in every three was due to tuberculosis*. At the time the death rate in Zürich was far greater than the death rate in London.

Professor Cummins says that "these findings accord well with my [his] 90 per cent. of 'positives' to 1 in 1,000 [*sic*] tuberculin in healthy adult males." He actually infers that the positive reaction is almost as common in the healthy adult population of England as it was in the hospital population of Zürich and Dresden, when one death in every three was due to tuberculosis. Obviously Professor Cummins's method of testing the value of the intracutaneous reaction has led him into very serious error, and in the public interest I am bound to say so. Dr. Burkhardt, in his article, writes these pregnant words, which Professor Cummins has entirely ignored:

> "I have already made it clear that from such hospital material, drawn mainly from the urban working classes, precise statistical generalizations and conclusions as to the incidence and frequency of tuberculosis among the general population are to be made only with extreme caution." (*Zeit. f. Hyg. u. Infectionskr.*, 53-54, 1906.)

Nor is this all. It seems that Professor Cummins has chosen these musty statistics and ignored those of recent date, to which I have referred in my last book, *The Principles of Immunity in Tuberculosis*. The statistics of Hart (*Pathologische Beobachtungen wahrend des Krieges* usw.) show tuberculous changes in post-mortem examinations in 34.2 per cent., those of Rössle in 33 per cent., and those of Oberndorfer in 10 per cent.; Hart's statistics are the work of a master.—I am, etc.,

W. CAMAC WILKINSON.

London, W.1, April 15th.

SIR,—As a surgeon I have followed with much interest the correspondence in your columns between Professor Lyle Cummins and Dr. Camac Wilkinson as to the value of the intracutaneous tuberculin test. Neither of them has mentioned the test of Wildbolz of Bern. This test is based upon the principle that the kidney, among its other functions, is capable up to a point of excreting from the blood active bacteria and their toxins without perceptible damage to its normal function—for example, typhoid, dysentery, *B. coli*, etc.

Professor Blum of Vienna recently told me of a case of a young man who consulted him about a swelling of the epididymis. He was able to exclude venereal disease, and his diagnosis was tuberculous infection. This patient visited Wildbolz, who said, after his test, that it was not tuberculous trouble. The patient returned to Professor Blum, who, unbelieving, removed the diseased testis, and found the condition was an infarct, and not tuberculous. Wildbolz claims that his test is specific for active tubercle, and the allergic element of the patient is excluded by preliminary tests with tuberculin.

For the benefit of those who are not *au fait* with this test it is as follows. A specimen of the urine is taken, and is evaporated down at 50° C. to a small bulk. Two to three minims of the clear evaporated fluid are injected intramuscularly, and if tubercle is present there is an active oedema at the site of injection. I have carried out this test in two cases only, and it has proved true. Of course, one is sceptical, but if this test, along with allergic exclusion, is of value, as suggested by the Vienna school, it will be of real importance.—I am, etc.,

Bradford, April 14th. BASIL HUGHES.

REPRESENTATION AT POST-MORTEM EXAMINATIONS.

SIR,—Without criticism of the procedure in the particular case of the acquittal of a medical man, reported in your "Medico-Legal" column (April 6th, p. 669), may I draw attention to the attempt in recent legislation to secure for accused persons right of representation at post-mortem examinations, and to indicate how in practice it may come to naught.

Section 23 (4) of the Coroners Act definitely states that a medical man accused of neglect or being in any way responsible for the deceased's death shall "not be allowed to perform or assist at any post-mortem," but "shall have the right, if he so desire, to be represented at such post-mortem examination." But the whole section is only applicable "where a person states on oath before the coroner that in his belief" the death was due to or accelerated by the medical man. The trouble arises from the fact that the necropsy is invariably, and rightly, performed before the inquest, at which any statement inculpating the medical man is made, and until such sworn statement is made Section 23 (4) is not applicable.

Sir Bernard Spilsbury rightly places on the coroner the onus of the conduct of the procedure at post-mortem examinations. The coroner has absolute authority, the police act solely as his "officers"; until Section 23 (4) is invoked, he could allow anyone to be present at the post-mortem examination, or even to conduct the examination, as no person is technically "accused" till a statement on oath has been made against him. It would perhaps be unwise to allow any person likely to be incriminated to be present, but his representative could be there. It would be well, therefore, for any medical man likely to be accused to ask for permission for his representative to be present. But if this is refused the right to be represented does not arise under Section 23 (4) until the inquest is opened and the post-mortem examination already done; except in

those cases where the inquest is begun, the sworn evidence taken, and the examination is then ordered on adjournment. Usually the first intimation of any charge against the medical man comes out at the inquest, when it is too late for him to avail himself of the right especially provided in the Act of 1926; by then, indeed, he may have already performed the examination himself.

It would be an advantage if the provision of Section 23 (4), conferring on an accused person the right to be represented at a post-mortem examination, could apply even in cases where the accusation was not made on oath, but as an ordinary statement to the coroner's officer.—I am, etc.,

EDWARD F. HOARE, M.D.

Ringmer, near Lewes, April 12th.

PLEURAL ADHESIONS AS A POSSIBLE CAUSE OF ASTHMA.

SIR,—In the literature on asthma to which I have access I can find no reference regarding pleural adhesions in this disease. Osler mentions that the disease may be induced reflexly from the stomach, intestines, or genital organs, or by direct irritation of the bronchial mucous membrane. My edition of Cunningham's *Anatomy* does not even mention the nerve supply of the pleura.

It would be of interest to know if any animal experiments have been performed to discover what happens to the bronchial musculature on stimulation of the surface of the lung.—I am, etc.,

W. L. ENGLISH, M.B.

Crewe, April 18th.

THE ORIGIN OF "QUARANTINE."

SIR,—Under the caption Nova et Vetera in your issue of January 19th (p. 122) appears an interesting article by Dr. F. G. Clemow with reference to the origin of the word "quarantine" and the probable reasons which led to the adoption of a period of forty days as one suitable for that purpose. As so often happens, the study of the origin of words in our language opens up a fascinating field for investigation and speculation.

It would seem that the determination of a fixed period of forty days, or years, is one that has been transmitted from remote antiquity in the literature of the Old Testament. It was the period of time deemed suitable for purposes of trial, punishment, preparation, or purification in matters either mundane or spiritual.

Dr. Clemow makes mention of one passage in Leviticus, but the Old Testament is teeming with references to the precise period of time under consideration. The world was purged of evildoers by the Great Flood in forty days (Genesis vii, 17); Moses was forty days in the mount at the giving of the law (Exodus xxiv, 18), presumably a period of preparation and communion with the Deity; and the Israelites spent forty days searching and making trial of the land of Canaan (Numbers xiii, 25). Other references with analogous applicability are found in I Samuel xvii, 16, in I Kings xix, 8, and in Jonah iii, 4.

The Israelites wandered forty years in the wilderness as a punishment—"to humble thee and to prove thee" (Deuteronomy viii, 2). The maximum number of stripes, or strokes, to be inflicted on a malefactor was also forty (Deuteronomy xxv, 3). The Messiah fasted in the wilderness forty days tempted of Satan, as a period of trial and preparation (Mark i, 13). [The neighbourhood is still known as Mount Quarantana or Jebel Kuruntul.]

In the early centuries of the Christian era, and especially in the mediaeval ages, there existed an intimate correlation between the Church and medicine. The priests and monks of the day were also the healers and quasi-practitioners of medicine. It would seem not unreasonable to suggest that in casting about for a suitable quarantine period they would adopt (or continue, rather) a custom sanctioned by Biblical usage, and therefore familiar to them, and one which, for that especial reason, would receive the imprimatur of the Church.—I am, etc.,

S. M. JACKSON, M.D.

Boodepoort, Transvaal, March 12th.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I:* W. S. Gross, A. Lazarow, R. Wear. *Part II:* N. H. Bharucha, S. J. Dikshit, D. MacD. Fraser, W. R. G. Frayne, J. B. Hartley, Helen M. Koeller, H. B. Padwick, N. A. Quraishi, A. M. Tripathi, R. Wear, C. Wroth.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on April 20th the following degrees were conferred:

M.D.—*A. Main, *A. S. Strachan, †O. H. Mayor, J. Anderson, H. S. Banks, G. M. Currie, R. J. L. Fraser, Margaret B. Graham, J. Matheson.

M.B., CH.B.—‡A. McN. Wylie, ‡A. T. Wilson, †F. B. Anderson, †T. F. Rodger, Ida E. Ashby, P. Barr, Jean M. Barrowman, R. S. P. Begg, R. P. Boyd, W. P. Brown, A. MacL. Campbell, I. S. Campbell, D. T. Clark, W. A. Clark, J. S. Craig, T. Dunlop, J. Fahy, R. Forrest, Isobel C. Fraser, P. A. Gallen, W. S. Gardner, Annie R. Greig, T. McF. Haughie, D. L. Henderson, H. W. Laing, J. W. Laird, L. W. Laurenson, H. R. Leishman, D. C. Liddle, J. H. McBroom, D. R. McCalman, W. D. C. McCrorie, J. McMichael, W. J. McNeish, Georgina A. McNicol, A. F. Maguire, J. L. Mayer, T. R. Murray, A. J. Nairn, Mary S. Nicholson, J. P. O'Hear, Jean B. Parker, Ellen J. C. Ross (Mrs. Campbell), M. M. Scott, J. G. Stimson, W. Smith, J. Stewart, J. Taylor, H. R. Weir, H. Wyers.

* With high commendation. † With commendation.
‡ With honours.

The following prizes were presented to the successful candidates: The Captain H. S. Ranken, V.C., Memorial Prize of £4 10s., awarded to the student who obtained the highest marks in the subject of pathology in the professional examinations held in the year 1928, to W. S. Mack; the Bellahouston Gold Medal for eminent merit in thesis for M.D. to R. P. Smith; the Straits Settlements Gold Medal for thesis for M.D. on a subject in connexion with tropical medicine or tropical hygiene to John W. Graham; the Macewen Medal in surgery to J. S. M. Robertson; the Macleod Gold Medal for surgery to Jean G. P. Stephen.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—*Medicine:* J. McK. Reid, A. K. Nandi, J. R. S. Gupta, L. Grunis, N. M. Vallely, A. R. Perera, D. Gould, L. A. Paranavitane, B. Kounine, J. Elliott. *Surgery:* F. J. Fell, R. W. Mungul, I. El-Aroussi. *Midwifery:* A. K. Nandi, N. M. Vallely, R. W. Mungul, A. R. Perera, A. S. K. Swami, H. Michaelson, L. St.C. Ferguson, D. Gould, L. A. Paranavitane, B. Kounine. *Medical Jurisprudence and Public Health:* T. G. Ward, H. C. Franz, M. A. Perera, W. C. Ross, D. D. W. Waidyasekera, A. J. Sutherland, A. O. Jollie, C. Cairncross, R. M. Irving, J. C. Coetzee, W. E. Faulkner, S. C. Grant, J. E. La Frenais, J. B. D. Oliver.

Out of 76 candidates entered the following, having passed the Final Examination, were admitted L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.and S.Glas.:

M. E. Tiruchelvam, M. U. Hayat, Mary E. J. Magee, D. C. Dewar, K. R. L. Evans, S. Schmulian, Violet D. Hunter, J. C. Baumann, M. A. Yousef, Claire N. Brownsberger, S. S. Nagi, S. K. Mitra, Anna N. Edward, C. H. Lovell S. H. Al-Junied, I. Campbell, M. Rifaat, Anna G. McGregor, B. C. Guha.

The Services.

INDIAN MEDICAL SERVICE DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 19th, at 7.15 p.m. Lieut.-Colonel D. G. Crawford, "the historian of the service," has been invited to take the chair. Tickets, and all particulars, may be obtained from the joint honorary secretary, Major Sir Thomas Carey Evans, *M.C.*, 31, Wimpole Street.

DEATH IN THE SERVICES.

Lieut.-Colonel William Henry Steele, R.A.M.C. (ret.), died at Clifton on March 25th, aged 84. He was born in Dublin on April 4th, 1844, and was educated at Trinity College, Dublin, where he graduated as A.B. and M.B. in 1866, and as M.D. in 1871. He had previously taken the L.R.C.S.I. in 1865, and became F.R.C.S.I. in 1889. He entered the army as assistant surgeon on October 2nd, 1866, attained the rank of brigade surgeon lieutenant-colonel on October 31st, 1892, and retired on March 3rd, 1897. When on the retired list he was employed at Devonport, in 1897-98, at Horfield, Bristol, in 1898-1905, and at Hot Wells, Bristol, in 1905-9. During the old regimental days he served in the Royal Artillery. He served in the Abyssinian war of 1867-68, and in the Ashanti war of 1873-74, receiving the medal granted for each of these campaigns.

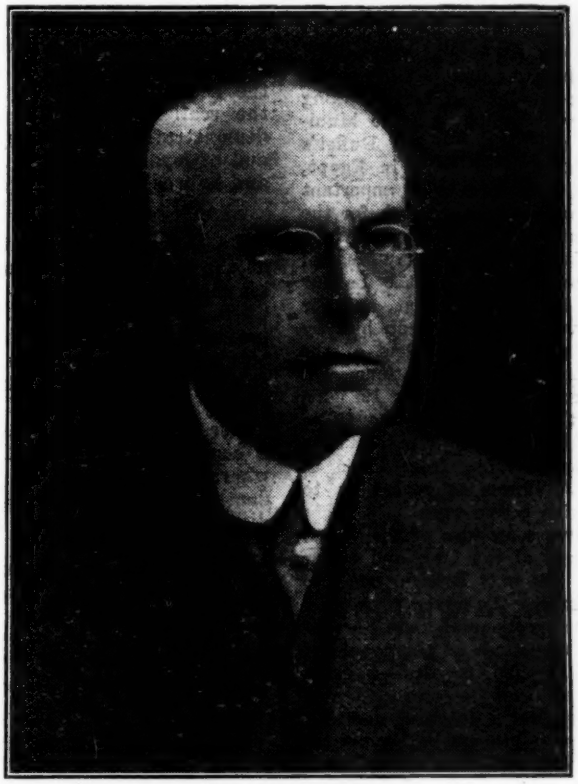
Obituary.

SIR GEORGE ADLINGTON SYME, K.B.E., LL.D., M.S., F.R.C.S., HON. F.A.C.S.,

First President of the College of Surgeons of Australasia; Vice-President of the British Medical Association.

WE have to record with deep regret the death of Sir George Syme, K.B.E., after a life of distinguished service to surgery and to the British Medical Association in Australia.

George Adlington Syme was born in Nottingham in 1859, and was educated in Melbourne at Wesley College and the University, where he graduated M.B. in 1881 with first-class honours and a scholarship; he proceeded M.S. in 1888. After holding the appointment of resident medical officer at Melbourne Hospital from 1882 to 1883, he returned to England and became a member of King's College Hospital, where he worked under Lister; he obtained the diploma M.R.C.S. in 1884, and the F.R.C.S. in 1885. He then widened his experience by acting as clinical assistant at the Royal London Ophthalmic Hospital, the Central London Throat and Ear Hospital, and the Soho Hospital, after which he returned to Victoria in 1887 and was appointed demonstrator and examiner in anatomy in the University of Melbourne. He was also for a time pathologist to the Women's Hospital and editor of the *Australian Medical Journal*; he held the post of honorary surgeon to out-patients at the Melbourne Hospital from 1887 to 1903, and surgeon to in-patients from then till 1919. During 1888-89 he was secretary to the Royal Commission on the Sanitary Condition of Melbourne. He had been surgeon to the Police Force and to the Queen Victoria Hospital since 1889, consulting surgeon to the Melbourne Dental Hospital since 1891, honorary surgeon to St. Vincent's Hospital since 1893, and lecturer on anatomy and a member of the Faculty of Medicine in the University of Melbourne from 1900 to 1904. Since 1912 he had been a member of the University Council, and had served on various committees. He was a University representative on the Advisory Board of the Melbourne Hospital, and from time to time acted as an examiner for medical degrees in the University of Sydney.



SIR GEORGE SYME.

The value of the services rendered by Sir George Syme to the British Medical Association cannot be overestimated. He was three times president of the Victorian Branch, and served as secretary, treasurer, and president of the Sections of State Medicine, Medical Ethics, and of Surgery. In 1922 he was appointed chairman of the Federal Committee, and he has been reappointed every year subsequently. In 1923 he was president of the Australasian Medical Congress (British Medical Association) when the first session was held in Melbourne; in the same year he was elected a Vice-President of the Association. He was for many years the admitted leader of the medical profession in Australia, and, after his retirement from active practice in June, 1924, the Victorian Branch recognized his many services to the Association and the medical profession by presenting him with his portrait painted in oils by Sir John Longstaff; reference was made to this event in our columns on January 17th, 1925 (p. 134). The Branch further established in 1925 a Syme Foundation under the name of "George Adlington Syme Prize." In June, 1924, he received the honour of knighthood, and in the following year he was chairman of the Federal Royal Commission on Health. The formation of the College of Surgeons of Australasia was greatly helped by his co-operation, and in 1927 he was elected the first president. Among his other public appointments may be mentioned the following as indicating the width of his outlook: he was a member of the Appeal Board of the Commonwealth Repatriation Department; president of the Repertory Theatre, Victoria; trustee of the Medical Society of Victoria; and member of the committee of the new Presbyterian Church of Australia. He was the author of numerous contributions to medical literature, and published various lectures and addresses. During the war he held the rank of lieutenant-colonel A.I.F., and was chief of the surgical staff of the First Australian General Hospital; he was also consulting surgeon to H.M. Hospital Ship *Gascon*.

It will be within the memory of our readers that he achieved a long-cherished desire when he came to England last year in connexion with the Annual Meeting of the British Medical Association in Cardiff. Together with two prominent South African members of the Association he was the guest of honour at a luncheon given by the Officers of the Association on July 6th, 1928. The degree of Doctor of Laws of the University of Wales *honoris causa* was conferred upon him, and Professor A. W. Sheen, who introduced him, spoke of the high appreciation felt by the University for the professional public work of one who was welcomed as a worthy representative of the medical profession of the Dominions and of the British Medical Association. He made an impression on those with whom he came into close contact in this country which explained the high estimation in which he was held in Australia and the confidence which was reposed in his judgement.

[The photograph reproduced is by Johnstone, O'Shannessy, and Falk, Melbourne.]

THE LATE DR. ALEXANDER GRANVILLE.

DR. ALEXANDER GRANVILLE, who died in London on March 23rd after a long and trying illness, was one of the most distinguished British officials who have served the Egyptian Government, and fully upheld the high standard of efficiency and conduct which characterized the administration of Cromer and Kitchener. A brief notice of his life and career has already appeared in our issue of March 30th (p. 623), but these further notes, contributed by a colleague, will be appreciated by the numerous members of the profession who came in contact with him during his life, and especially in Egypt during the period of the war.

At the beginning of this century, during the South African war, he contracted a bad attack of enteric fever, complicated by phlebitis; the resulting thrombosis adversely affected his health for the remainder of his life, and was finally responsible for his death at the age of 55 from embolism. As is frequently the case, he put on weight after his attack of enteric, and the burden of the flesh lay heavily upon him in his later years; although he made light of it, it handicapped severely a natural activity of the body, which was as much a part of him as his very active mind. His fine work in fighting plague in Upper Egypt in 1907-8 first directed attention to his great administrative abilities, and led to his appointment as M.O.H.

Cairo in 1908. He found full employment for his great talents in coping with the sanitary problems of one of the twenty largest cities of the world, with a death rate unknown in Europe, and a mixed population drawn from most of the races of the East and the West. In this he was so successful that in 1912, by Lord Kitchener's express wish, he was appointed director-general of the Alexandria municipality. The complicated affairs of this city had necessitated an inquiry, and a firm and steady hand and general reforming influence were needed, and were forthcoming in the person of Granville. This was one of his greatest successes; all his knowledge of men, tact, and powers of conciliation, and profound grasp of languages were needed to reconcile the differences and reform the abuses which had sprung up in the management of the affairs of this great cosmopolitan city, with all the undercurrents of Levantine and Oriental subtlety. On the death of Sir Armand Ruffer in 1917 he succeeded him as president of the International Quarantine Board, giving up his position as director-general, but retaining his connexion with Alexandria as vice-president of the Municipal Commission. He also took over Sir Armand Ruffer's position as commissioner of the British Red Cross in Egypt, Palestine, and Syria. This was a very large and important administration, which did an enormous amount of work for the comfort of the sick and wounded, and which collaborated in a most friendly and willing fashion with the official Army Medical Service. After the war he became president of the Labour Conciliation Commission on labour troubles in Egypt, and for his services the dignity of Pasha was conferred upon him by King Fuad in 1922. He was also appointed president of the Egyptian medical delegation to the League of Nations. On retirement from the Egyptian Government Service in 1923 his services were retained to attend the meetings of the Office International d'Hygiène Publique in Paris as representative for Egypt. It was on one of the journeys from Paris to Geneva that he was stricken with illness so severe as to necessitate his gradual retirement from active work.

This brief sketch of his career gives some idea of the varied accomplishments of Dr. Granville, and of the force and power that he was among his fellow men, not only British, but also among all the nationalities which comprise the mixed population of the people of Egypt. His intimate colloquial knowledge of languages enabled him to penetrate the minds of the people of various nationalities with whom he had to deal—French, Italian, Greek, or Arab—in a way that is given to few Britishers. In addition, his sympathetic interest and his remarkable capacity for friendship gave him an influence over individuals of all classes, from the highest to the lowest, of a most exceptional kind, and caused him to be regarded with a very sincere affection by all with whom he came in contact.

Apart from the onerous duties of his official career, his private life was a very full one. Until he fell into very poor health he thoroughly enjoyed every moment of his life, and even towards the end his unquenchable spirit seldom failed to see the silver lining to the cloud. For instance, on partial recovery from a slight stroke which affected his speech some months before his death, he smilingly remarked that it was the first time in his life that he had ever stopped talking. He was a fluent and ready speaker and a brilliant raconteur, gifted with a very retentive memory. He had a critical appreciation of art in all its forms. His private letters were full of wit and humour, and were generally illustrated with delightful little sketches of people and places and events in line or colour, dashed off on the spur of the moment by his facile hand. Indeed, these gifts were such that had his career tended in that direction he could have become an artist of renown. Literature and music were no less attractive to him, and wood-carving, self-taught, from his own designs was one of the hobbies of his later years.

There is no doubt that Granville Pasha's was one of the ablest and cleverest brains in Egypt during his time, and he had the will and the energy to employ it to the greatest advantage, whether at work or play. He was most versatile, and interested in everything around him; he enjoyed good food and wine and pleasant company, was the life of any party or gathering, whether grave or gay, and was the very soul of hospitality in his own house and elsewhere. His friends, who were legion, feel that they will never look upon his like again. He was buried in Chiswick cemetery, and his funeral was attended by a large number of his Egyptian friends and associates, including the Egyptian Chargé d'Affaires.

THE LATE SIR BERTRAM WINDLE.

DR. R. ALLAN BENNETT (Talcahuano, Chile) writes: The announcement on February 23rd (p. 375) of Sir Bertram Windle's death will carry many an old Birmingham man back in spirit to the prehistoric dissecting rooms of the Queen's College, and to the dark and dangerous stone stairs that deviously led to them. Now, nearly forty years after, I can see Dr. Windle's tall figure dash into the lecture room; I feel again the hush that used to fall upon the most turbulent as his grey apocalyptic eye ranged over the class; and I can remember, as though it were but yesterday, the patience, the brilliance, the vividness of his enthralling lectures. He never appeared to bother much about our personalities. He rarely spoke to us, and hardly ever had a word of encouragement or of praise; but in after years one awoke to the fact that he had always taken the keenest interest in the performances of his men, and the realization dawned that behind that singularly undemonstrative manner lay innumerable springs of kindness and of loyalty. He was just, and fierce, and self-sufficing, and he was the greatest teacher I ever knew.

Dr. ARTHUR MURRAY MASTERS, who died on March 9th at the age of 48, was born in New South Wales, received his medical education at Edinburgh, and graduated M.B., Ch.B. in 1910; four years later he proceeded M.D. After holding the appointments of assistant resident medical officer to the Westmorland Sanatorium and assistant tuberculosis officer at the Stepney Dispensary, he joined the county of Durham health service as a district tuberculosis officer in November, 1914. During the war he served as a captain in the R.A.M.C. from 1916 to 1919 in India, where he contracted the illness which caused his untimely death. He had exceptional experience of tuberculous disease, and his opinion as a consultant was much valued by medical practitioners in his district. His friends and colleagues on the Durham county medical staff respected him highly for his great sincerity and his integrity of character. Dr. Masters was a member of the British Medical Association, the Northern Branch of the Society of Medical Officers of Health, and the North of England Tuberculosis Society. He leaves a widow but no family.

Dr. ROBERT SAMUEL TROTTER, who died in Sydney on March 10th, aged 59, was the eldest son of the late Dr. Robert Bruce Trotter of Perth, Scotland, and a brother of Dr. Alexander Trotter of Perth. He received his medical education at Aberdeen, Edinburgh, and Newcastle-on-Tyne, and graduated M.B., C.M.Aberd. in 1898, proceeding M.D. in 1903. In 1908 he obtained the B.Hy.Dunelm. and the D.P.H., and in 1911 the D.Hy. He was awarded the certificate of the Royal Medico-Psychological Association. He succeeded his uncle, Dr. James Trotter, in practice at Bedlington in 1899, and was medical officer of health there and a member of the Northumberland County Council until 1914, when he left to take up the appointment of medical officer, Fiji. In 1916 he became chief medical officer of Raratonga, capital of the Cook Islands. In 1925 he was appointed medical officer of health for Broken Hill, New South Wales, but after six months he resigned owing to ill health. Dr. Trotter was the author of some valuable contributions on miner's phthisis, and wrote the article on this subject in the *Encyclopaedia Medica*. He was for many years a member of the British Medical Association; in 1912 he was vice-chairman of the Blyth Division, and chairman from 1913 to 1915. He was a member of the North of England Branch Council from 1912 to 1915. Dr. Trotter married Miss Janetta Stevens Martin of Perth, who, with a son and daughter, survives him. He will be remembered by a large circle of friends in the North of Scotland and the North of England as well as in the Islands of the Pacific.

The following well-known foreign medical men have recently died: Geheimrat PAUL DOEHLE, formerly professor of pathology at Kiel University, aged 73; Dr. ALOIS KREIDL, professor of physiology in Vienna; and Geheimrat KOPPEN, the oldest medical practitioner in Germany, aged 93.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week considered the Budget resolutions and the Finance Bill, and also discussed education and unemployment. Amendments made by the House of Lords in the Local Government (Scotland) Bill were put down for review by the House of Commons on April 26th.

In the House of Lords, on April 23rd, Viscount GAGE, on behalf of Lord Desborough, introduced a bill to enable the Council of the Pharmaceutical Society of Great Britain to make by-laws providing for the registration without examination of persons desiring to be registered as pharmaceutical chemists in Northern Ireland. The bill was read a first time.

The Parliamentary Medical Committee met at the House of Commons on April 22nd, probably for the last time before the General Election. Votes of thanks were carried to the chairman, Dr. Fremantle, who has been in the chair for nearly five years, and to the honorary secretary, Dr. Drummond Shiels. The Committee discussed the recent small-pox outbreak, and hoped that the Government would impress on the general public the advisability of vaccination and the facilities available for it. Attention was drawn to the fact that the two international health organizations, in Paris and Geneva respectively, had not provided a sufficient channel for discussion before action was taken by the French Government. There was a discussion about the Government's scheme for the purchase of radium, and Lord DAWSON OF PENN made a full statement. The Committee passed a resolution welcoming the announcement that the door is still open for a conference with the medical profession, and it held emphatically that full use should be made of such invitations to consult before action was taken under the Government's plan. Consideration was given to the results of Lord Onslow's appointment as acting Under-Secretary of Health in the Lords for the Local Government Bill. The Committee resolved that it was desirable for the Government to make permanent the appointment of a second Parliamentary Under-Secretary to the Minister of Health, in view of the heavy work of that Minister in Parliament and of the calls on him for conferences and inspections. The Committee concurred in the suggestion that at the coming General Election all medical men who were candidates should press for the clearance of slums and continuance of a national housing effort; for reform of the Lunacy Laws; for the amendment of the Factories and Workshops Acts; and for the active and progressive administration of the new Local Government Act.

On April 24th Mr. Baldwin announced that Parliament would be dissolved on May 10th, and the General Election would follow on May 30th. Among the bills which he enumerated as likely to pass into law before the dissolution was the Pharmacy (Northern Ireland) Bill, but he did not include the Preservation of Infant Life Bill, which now awaits consideration by a committee of the House of Commons.

Local Government (Scotland) Bill.

In the House of Lords, on April 17th, Lord SALISBURY brought up the Local Government (Scotland) Bill on the report stage. In Clause 5, dealing with the transfer of the functions of the parish council, Lord ONSLOW moved to insert a new subsection, as follows:

(3) Where in the constitution of any trust or other body, whether corporate or not, provision is made for the appointment as trustees or members of the governing body of one or more members of a district board of control whose functions are by this Act transferred to two or more transferee authorities, the General Board of Control for Scotland may, after consultation with the trustees or governing body, by order provide for the transferee authorities concerned jointly or a joint committee thereof or for the transferee authorities severally nominating trustees or members of the governing body in place of the members of the district board of control, and the constitution of the trust or other body shall have effect subject to the provisions of any such order.

Lord Onslow said the amendment was designed to meet such a case as that of the Royal Asylum at Montrose, where under the constitution the District Board of Control had a right to appoint representatives to the governing body. That district board would now disappear, and its functions would be transferred to two separate authorities, the county council of Angus and of Kincardine. The amendment authorized the General Board of Control to provide that the appointment of these representatives should be made either by the two county councils jointly, or by a joint committee, or else a stated number of appointments might be given to one county council and a stated number to the other.

The amendment was accepted without debate.

A drafting amendment was made in Clause 14, subsection 5, which enacts that every administrative scheme relating to education made by the council of a county, which includes a large borough, for the purposes of education, shall make provision for medical inspection, supervision, and treatment of children attending the borough schools, and that in this provision the county council shall utilize the medical and nursing staff of the town council and the clinics and hospitals under the control of that council. As amended the clause provides that "the county council before making any such scheme, and the department before approving any such scheme, shall consult with the town council, and any such scheme when so approved shall be binding on the town council." The amendment was accepted.

Clause 35 relates to the appointment of medical officers of health and sanitary inspectors. Lord Onslow moved a drafting amendment to ensure that the provisions of the clause applied to a vacancy which had not been filled at the commencement of the Act as well as to a vacancy arising after that date. The House accepted the amendment, and Lord YOUNGER then moved to leave out the whole clause in order to substitute a new form of words intended to ensure that county sanitary inspectors in Scotland should always become the sanitary inspectors of the small burghs. He contended that this would secure a much better official and a more independent man. Lord ONSLOW said the House had already accepted this principle of appointment of the county authority in the case of the medical officer of health, but different considerations presented themselves in respect of the sanitary inspector. In some of the smaller burghs of Scotland only a very small sum was available for the payment of a sanitary inspector. The bill sought to ensure that all sanitary inspectors should be thoroughly qualified persons. Under Lord Younger's amendment the county sanitary inspector would be concerned with major sanitary services in a small burgh, and the burgh sanitary inspector with lesser services, including the supervision of lodging houses. Many of the smaller Scottish burghs had represented strongly that it was desirable that they should have a sanitary inspector to themselves. Seaside resorts had pressed for this. Under the Government's clause the smaller burghs could secure their wish, provided their official was a qualified man as prescribed by the Department of Health. If a burgh wished to have a sanitary inspector, but could not afford to pay for a qualified man, then that burgh must come to an arrangement, and in all probability it would appoint the county sanitary inspector.

Lord SALISBURY said that if Lord Younger's amendment was carried the sanitary inspector would not be under the medical officer for all purposes. One of the unsatisfactory features of the law in Scotland was that even if the amendment were carried the sanitary inspector could not for all purposes be under the medical officer of health. The proper relation between the sanitary inspector and the medical officer was one of subordination, and in process of time legislation would probably provide that the sanitary inspector was so placed for all purposes. The House divided, and rejected by 33 to 20 the clause as it appeared in the bill. The clause in the new bill proposed by Lord Younger was then inserted in the bill as follows:

On a vacancy arising after the commencement of this Act in the office of medical officer of health or sanitary inspector of a small burgh, the medical officer of health or sanitary inspector, as the case may be, of the county within which the burgh is situated shall *ipso facto* become the medical officer of health or sanitary inspector for the burgh, and such proportion of the salaries and expenses of such officer as the county council and the town council may agree shall be paid by the town council to the county council, and, failing agreement, as may be determined by the Department of Health.

In the first schedule of the bill, which relates to the functions transferred to county councils from the town councils of small burghs, Lord ONSLOW moved to add the Explosives Acts, 1875 to 1923, and the Petroleum Consolidation Act, 1928, except Section 11. He explained that this meant that the section of the Petroleum Act relating to questions of amenity would not be transferred.

The report stage was concluded and the bill put down for third reading on April 25th.

Small-pox.

In a reply to a question by Mr. RAMSAY MACDONALD, on April 17th, Sir AUSTEN CHAMBERLAIN said he understood that the French Council of Ministers had that day decided provisionally to suspend the order demanding from passengers landing in France from Great Britain, from India, and other places evidence that they had been vaccinated within the last two months. He further understood that the Council had decided to arrange for a meeting between the French and English health authorities, so that the two countries could act in common in taking whatever precautions might be deemed necessary. The British Foreign Office had pointed out to the French Government that the occurrence of small-pox in the United Kingdom was very restricted. The period of incubation of the disease from the ship *Tuscania* was over, and there were no reasons to anticipate any further cases. There was nothing in the nature of an epidemic.

On the same day Sir JOHN GILMOUR (Secretary for Scotland) said the steamer *Tuscania* had been dealt with by the medical authorities of the Port of Glasgow in the manner authorized by the

International Sanitary Convention of 1926, which had been ratified by the United Kingdom last year. Two engineers and some frozen poultry had been transferred from the *Tuscania* to the s.s. *Caledonia* before the former vessel had been fumigated or disinfected. The doctor and the purser of the *Caledonia* were notified that the engineers and foodstuffs were from the former ship. Under the International Sanitary Convention the medical officer of health for Glasgow had no power to prevent the transfer to another vessel of the engineers, who were not suffering from small-pox, or of the foodstuffs, even if he had thought it desirable to do so. Sir John Gilmour added that he was satisfied that the measures taken by the medical authorities of Glasgow were in accordance with the International Sanitary Convention, and were all that could reasonably be done to prevent the spread of infection. He promised to investigate an allegation by Mr. Johnston that flour had been transferred from the *Tuscania* to another ship, and that information on the subject had been given to the port medical authorities by the dockers who had to handle these goods.

Dr. VERNON DAVIES asked whether the medical officer of the *Caledonia* knew that these engineers and foodstuffs came from a vessel in which small-pox had broken out. Sir JOHN GILMOUR said he was told the medical officer was fully aware of the circumstances.

Answering Dr. Fremantle, on April 18th, Mr. CHAMBERLAIN said the number of cases of small-pox among the 1,598 persons (passengers and crew) of the s.s. *Tuscania* was 45, which is 10 more than the figure of 35 announced on April 13th. There had been seven deaths. The vaccination history of the patients who died, and of the other patients, was not yet available. All other patients notified had been isolated in hospital, and all the contacts kept under supervision. He had no information at present that any persons other than those who were on board this ship had contracted small-pox from contact with the passengers or crew. The rigorous action which had been taken in the United Kingdom to prevent the spread of small-pox from this vessel appeared to have proved effectual. As the ship arrived seventeen days ago, any serious risk of a widespread outbreak of the disease should now be at an end, even though some secondary cases might arise. For the community in general facilities were always available for free vaccination, the best safeguard against any risk of infection. He hoped to secure the vaccination history of those who had died, and would convey the information to Dr. Fremantle.

Dr. FREMANTLE further asked, on April 18th, the number of small-pox cases amongst passengers and crew of the s.s. *Mashobra*, shortly due at Southampton from Bombay; what number of passengers landed at Marseilles for England; and what steps were being taken to prevent the introduction of small-pox through them into this country. Mr. CHAMBERLAIN said it was not yet known whether there had been any small-pox aboard the *Mashobra*, but all precautions were being taken, and she would be closely inspected at Plymouth, her first port of arrival. He was informed that 31 of her passengers landed at Marseilles. Whether a case of small-pox was landed there from this ship was not known.

Mr. GODFREY LOCKER-LAMPSON told Dr. Fremantle, on April 18th, that official confirmation had been received of the suspension of the new French regulations with regard to the revaccination of persons travelling from the United Kingdom to France. Discussions continued with the French Government. Dr. FREMANTLE asked why such action should have been taken when at least two international bodies dealt with health matters, one in Paris and one at Geneva. The SPEAKER suggested that this question should be put down.

Sir GEORGE HENNESSY, answering for the India Office on April 18th, told Mr. Viant that there was an epidemic of small-pox in Bombay City, where there had been 233 cases and 130 deaths between January 1st and February 16th. According to a press report the deaths from January 1st to March 18th numbered 368. In the whole of British India between January 1st and February 16th there were 19,529 cases of small-pox and 4,821 deaths, the case and mortality rates being approximately the same as for 1928.

Radium.

Commander KENWORTHY asked, on April 18th, whether the Government had proposals for international action through the League of Nations for control of the available supplies of radium and their price. Mr. CHAMBERLAIN said that until the organization had been established which the Government proposed should act as an agency for the purchase of radium in this country or for Dominion or Colonial Governments, and until experience had shown how far this organization met the needs, to consider international action would be premature. He hoped that the setting up of the organization would not take long. International action was not mentioned in the report of the subcommittee of the Committee of Civil Research, and the immediate question for the United Kingdom was whether it could obtain the supplies it required at a reasonable price. There was every reason to believe that could be done.

Dr. VERNON DAVIES asked whether the House before it rose would have a chance of discussing this report.

Mr. CHAMBERLAIN said he supposed there would be a supplementary estimate for the amount to be contributed by the Government. He thought that would give an opportunity for discussion. The subcommittee which presented the report had finished its labours.

Sir KINGSLEY WOOD informed Mr. R. Morrison that the functions of the trustees, as defined in paragraph 82 of the Radium Subcommittee's Report, would not extend to the expenditure of any funds in an endeavour to discover independent sources of supply. The Government could not give the date of the public appeal for funds to purchase radium, though they hoped it would be made in the near future. The precise form of the organization recommended by the Radium Subcommittee, and accepted in principle by the Government, was under discussion, and Sir Kingsley hoped it would be settled in a very short time. Mr. MORRISON asked whether the promised statement would be published before the General Election. Sir KINGSLEY WOOD replied that he hoped it would be published within a few days.

Report of the Joint Committee on Mental Deficiency.

Answering questions put on April 18th by Commander Kenworthy and Mr. R. Morrison, Mr. CHAMBERLAIN repeated his previous refusal to undertake to publish, until he had given full consideration to it, any part of the report of the Joint Committee on Mental Deficiency other than that which related to children. He had not yet had an opportunity of looking at the report.

Mr. PETHICK-LAWRENCE asked whether local authorities had to put part of the report into force and to prepare schemes before September.

Mr. CHAMBERLAIN said there was a good deal of time before September. He could not say definitely when the report would be published. Actually there were two reports. That relating to children was for the Board of Education to consider. That relating to adults raised a bigger question. He was not sure what effect the report would have on the liberty of the subject.

Dr. VERNON DAVIES asked whether Mr. Chamberlain would carefully study the report before arriving at decisions on the schemes submitted by local authorities. Mr. CHAMBERLAIN: Certainly.

National Insurance.—During a discussion on the Dominions Office Vote in the House of Commons on April 18th, Mr. J. H. THOMAS suggested that nationally insured persons leaving the United Kingdom for the Dominions should be permitted to commute the reserve value of the payments they had made. Mr. AMERY replied that a committee under Sir Donald Maclean had come to the conclusion that, except in case of deposit contributors to national health insurance there was no fund from which the insured person could claim a surrender value, and the payment of any sum on emigration would fall on the Exchequer. He would like, however, to see the whole problem reinvestigated.

Dental Treatment under the Insurance Acts.—On April 22nd Mr. CHAMBERLAIN, replying to Mr. Shinwell, who asked if he was aware that applicants for dental treatment who were members of approved societies in the London area were being inconvenienced through delays in dealing with their claims, said that, owing to a large and rapid increase in the number of cases referred to the regional dental staff, there had been some delays of the kind suggested. Steps had been taken, and a considerable improvement had been effected.

War Pensions: Final Awards.—On April 16th Lieut.-Colonel G. F. STANLEY told Lieutenant Commander Kenworthy that the statutory regulations of the Ministry of Pensions required that a final award (in cases of recurrent disability, including neurasthenia, gas poisoning, and malaria) should not be made until the condition was reasonably stable. He was not aware that hardship had been caused in any class of case by the granting of final awards, whether of life pension or other form of compensation. Each case was considered on its merits, and, in any event, the man had a right to appeal to an independent tribunal. If a condition due to war service called for treatment, it could be provided, and allowances could also be paid where they were justified, notwithstanding that a final award might have been made. If, as a result of such treatment, the final award was found to have been seriously erroneous as an assessment for permanent purposes, a further grant of pension could be made under special sanction.

Doctors on County or Borough Councils.—On April 19th Sir CHARLES TREVELYAN asked whether, when the powers of the boards of guardians were transferred to a city or county council, a councillor who was holding a position such as doctor or public vaccinator under the transferred board would be compelled to resign his position as councillor if he continued his professional work under the new authority. Mr. CHAMBERLAIN said he was advised that a person who, after April 1st, 1930, held such a position as that of district medical officer or public vaccinator under a county or county borough council would be disqualified from being a member of that council.

Homes Registered under the Nursing Homes Act.—Sir KINGSLEY WOOD told Sir Robert Thomas, on April 17th, that medical officers of health had been asked to include in their annual reports for 1928 statistics of homes registered under the Nursing Homes Act, which came into operation on July 1st, 1928. These reports were not yet available, and the Minister of Health had no detail information of how local supervising authorities were exercising their powers to insert nursing homes under the Act.

Notes in Brief.

Three education authorities in Wales—Cardiganshire, Carmarthen Borough, and Pembroke Borough—at present make no provision for dental treatment of school children.

A Slaughter of Animals Bill, presented by Colonel Moore and supported by Dr. Drummond Shiels, was read a first time in the House of Commons on April 18th.

The proposal of the German Government to ratify the Geneva protocol prohibiting the use of poison gas in war was passed by the Reichstag on March 21st, but the British Foreign Office was not aware on April 18th that Germany had yet formally ratified it.

According to the Registrar-General's statistical review the estimated populations of the United Kingdom for the years 1924-27 inclusive were 44,886,000, 45,040,000, 45,218,000 and 45,435,000 respectively, an average annual increase during that period of 183,000.

The chief alkali inspector of the Ministry of Health has made a report on the emission of fumes from artificial silk works. The Minister of Health is arranging for the publication of the report.

Medical News.

THE Prince of Wales will lay the foundation stone of the Eastman Dental Clinic (adjoining the Royal Free Hospital in Gray's Inn Road) on Tuesday, April 30th, at 2.30 p.m.

THE fifteenth annual conference of the National Association for the Prevention of Tuberculosis will be held on October 10th, 11th, and 12th at Newcastle-upon-Tyne. Further particulars will be issued shortly from the association's office, 1, Gordon Square, W.C.1. The association is at present conducting a series of popular educational lectures on the prevention of tuberculosis in the following parts of the country: North Uist, Oxfordshire, and Shropshire.

A SERIES of lectures and counter-lectures in aid of King Edward's Hospital Fund for London will be given at the London School of Economics, Houghton Street, Aldwych, at 5.30 p.m. on Tuesdays, April 30th, May 7th, 14th, and 28th, and June 4th. Further information and tickets may be obtained from the Secretary of the Fund, 7, Welbrook, E.C.4.

AT a meeting of the Illuminating Engineering Society (32, Victoria Street, S.W.) on Tuesday, April 30th, at 7 p.m., Mr. S. English, D.Sc., will open a discussion on some further properties of glass and their application in illuminating engineering.

THE annual general meeting of the London and Counties Medical Protection Society will be held at Victory House, Leicester Square, W.C.2, on Wednesday, May 1st, at 4 p.m., to receive the annual report and balance sheet, to elect officers, and to transact other business.

THE special M.R.C.P. course arranged by the Fellowship of Medicine from May 7th to June 24th will consist of sixteen lectures, on Tuesdays and Fridays, at the lecture hall of the Medical Society of London, 11, Chandos Street, W.1. An intensive course in diseases of the throat, nose, and ear will be held at the Central London Throat, Nose, and Ear Hospital from April 29th to May 18th. A special course in psychological medicine, with lectures and demonstrations, will continue at the Maudsley Hospital from April 29th to May 31st. The Fellowship of Medicine has arranged a summer programme of clinical lecture-demonstrations in medicine and surgery. On April 30th, at 2 p.m., Dr. H. V. Morlock will deliver a lecture on "Early infiltration and its relation to the development of phthisis"; on the same date, at 2.15 p.m., Mr. George Waugh will give a ward demonstration at the Hampstead General Hospital. Both of these are free to the medical profession. For those interested in neurology two weeks still remain of the late afternoon course daily at the West End Hospital for Nervous Diseases. From May 2nd to June 1st the London School of Dermatology (St. John's Hospital) will hold a special course consisting of clinical instruction in the out-patients' department, and lectures on specific dates. Pathological demonstrations can also be arranged. A four weeks' course in venereal diseases will be available at the London Lock Hospital, Dean Street, W.1, from May 6th to June 1st. On May 17th Professor Louise McIlroy will begin a series of four demonstrations on ante-natal diagnosis and treatment, limited to ten post-graduates. The last of the lecture-demonstrations at the Royal Free Hospital will take place on May 1st, and will deal with electro-therapeutic methods and apparatus in use in the department. Detailed syllabuses of any of the foregoing courses may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1, who will also supply information relating to the general course work at the various London general and special hospitals and copies of the *Post-Graduate Medical Journal*.

THE thirty-third post-graduate course organized by the Vienna Medical Faculty on surgery, orthopaedics, urology, obstetrics, and gynaecology will be held from June 3rd to 15th. Further information can be obtained from the secretary, Dr. A. Kronfeld, Porzellangassell, Wien IX.

THE Joint Tuberculosis Council announces that from May 10th to 18th a post-graduate course will be held in Paris at the Clinique de la Tuberculose, Hôpital Laennec, 42, Rue de Sèvres. The course will include lectures and visits to those antituberculosis institutions in Paris and in provincial centres which are of greatest interest and at the same time representative of French organization. The majority of the lectures, the subjects of which include heredity and tuberculosis, the clinical value of allergic reactions, the use of lipiodol in differential diagnosis, prophylaxis in early infancy, B.C.G. vaccine, treatment by sanocrysin, and French antituberculosis organization and legislation, will be delivered in English; the rest will be translated immediately. Further particulars may be obtained from the honorary secretary, Dr. William Brand, the Larches, Farnham Royal, Bucks.

THE ninth congress known as the Journées Médicales de Bruxelles will be held from June 22nd to the 26th, in association with meetings of other Belgian scientific societies, including the League against Rheumatism, the General Association of Dentists, the Society of Ophthalmology, and the Society of Preventive Eugenic Medicine. As usual, a large exhibition is being arranged, and there will be numerous social functions and excursions, including a visit to the new Medical Faculty at Brussels. Further information may be obtained from the general secretary, Dr. R. Beckers, 62, Rue Froissart, Brussels.

THE third international congress for sexual reform will be held in London, under the presidency of Havelock Ellis, August Forel, and Magnus Hirschfeld, from September 8th to 12th, when the following will be the principal subjects for discussion: marriage and divorce, campaign against prostitution and venereal diseases, birth control, and sexual ethnology. Further information can be obtained from Dr. Norman Haire, 127, Harley Street, W., or from the Institut für Sexualwissenschaften, In den Zelten 9, Berlin, N.W.40.

THE next French congress of orthopaedics will be held in Paris on October 11th, when the following subjects will be discussed: para-articular tuberculous lesions of bone, introduced by M. Andrieu of Berck-Plage, and recurrent dislocation of the shoulder, introduced by M. Louis Tavernier of Lyons.

THE following German congresses will be held in May: Society of Oto-rhino-laryngologists at Königsberg, 16th to 18th; Physiological Society at Kiel, 21st to 24th; Tuberculosis Society at Bad Pyrmont, 23rd to 26th; Society for Psychiatry at Dantzig, 23rd to 25th.

THE April issue of the *Archives Médicales Belges* contains a detailed programme, in both English and French, of the International Congress of Military Medicine and Pharmacy, which will be held in London, principally at the British Medical Association House, from May 6th to 11th. Short accounts are given also of the development of the Royal Naval Medical Service and the Royal Army Medical Corps. In this issue of the *Archives* there is also an article by Commander W. S. Bainbridge, of the United States Naval Medical Service, on the place of surgery in the treatment of malignant growths.

IN the annual report of the committee of University College, London, for the year ending February, 1929, it is mentioned that the department of pharmacology has been able to enlarge its scope and activity very advantageously as the result of its endowment by the Rockefeller Foundation. With the pending opening of the London School of Hygiene and Tropical Medicine the department of hygiene and public health at University College will cease to exist, but arrangements will be made for the instruction in hygiene which is required by students of municipal engineering and architecture.

THE Health and Cleanliness Council announces that it has a number of attractive pictorial health posters and instructive leaflets suitable for display. On January 26th (p. 183) we mentioned two pamphlets published by it respectively for girls and boys; a third, entitled *Hints for the busy Housewife*, has now appeared and is likely to be as popular as its predecessors. Inquiries about supplies should be addressed to the secretary of the Council, 5, Tavistock Square, London, W.C.1.

LISTS of medical practitioners serving as members of local authorities or their subsidiary public bodies in Great Britain appeared in our issues of December 8th (p. 1057) and December 29th, 1928 (p. 1190), and February 16th (p. 314) and April 13th, 1929 (p. 702). We have since received intimation that Dr. Agnes Estcourt-Oswald was appointed a member of the Colchester Board of Guardians in April, 1928, that Dr. George MacFeat (Douglas) and Dr. G. E. Valentine (Uddingston) are members of the Lanarkshire County Council, that Dr. J. G. McCutcheon is a member of the Glasgow Town Council, and Dr. A. L. Pentland-Smith a member of the Elie Town Council, Fife. We are informed that Dr. E. E. Morrison of St. Andrews, whose name appeared in the list published in

our issue of April 13th as a member of the Fifeshire Education Authority, is not a member of the medical profession.

WE are informed that a Department of Dietetics was established at University College Hospital last November to deal with the special diets, particularly diabetes, nephritis, and gastro-intestinal disorders. The department is under the control of a member of the Honorary Medical Staff and in charge of Miss E. M. Marshall, B.Sc.Lond., who is a fully qualified dietitian. It is hoped later to inaugurate a school for the training of dietitians, with adequate courses of lectures combined with the practical work, for which fees will be charged. At present while such lectures are not available an opportunity occurs for the training of one or two pupils in practical dietetic work; this course would be of six months' duration and the instruction would be given free. Candidates should preferably possess a degree in Domestic Science. Further information can be obtained from the Matron of University College Hospital, Gower Street, W.C.

DR. T. STENNER EVANS of Dowlais, Glamorgan, has been appointed a Justice of the Peace for the County of Glamorgan.

A LOAN exhibition of old English silver (including Scottish and Irish) in aid of Queen Charlotte's Maternity Hospital will be held at Seaford House, Belgrave Square, S.W., from May 1st to 25th.

THE Académie de Médecine has awarded the Prince of Monaco prize of 100,000 francs to Professor Borel of Strasbourg for his work on the etiology of cancer.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SCHMIDT'S SERUM.

DR. R. WHITTINGTON (Hove) writes: I should be grateful if anyone who has tried Drs. Otto and Wolfgang Schmidt's serum and vaccine for cancer would let me know their results, whether favourable or otherwise.

AXILLARY HYPERIDROSIS.

"D. G." writes: Can any reader suggest treatment for excessive perspiration in both axillae, very much more marked in the right, and occurring constantly, irrespective of weather conditions? At one time the American preparation "odorono" controlled it for a few days, but it has no effect now. Inquirer is not in a debilitated condition, but always has very cold hands. The perspiration ceases towards evening, but is very distressing from the moment of dressing after the morning bath (hot, followed by cold sponge); it ruins clothes and causes a cold, clammy sensation, not to mention a certain amount of mental distress.

INCOME TAX.

Car Expenses of Assistant.

"J. M." is an assistant and pays his own car expenses, with the exception of petrol, oil, and garage. Can he claim anything in respect of that portion of the car expenses which is borne by himself?

*** Yes, including renewal of tyres, repairs, and, say, 15 or 20 per cent. for depreciation. The fact that one portion of the expenses is borne by the principal, and presumably deducted for the purpose of his income tax return, does not in any way affect the admissibility of "J. M.'s" portion.

LETTERS, NOTES, ETC.

DR. HUGH DONOVAN writes: I am incorrectly reported in the *Birmingham Post* of April 20th as having stated at the annual meeting of the Birmingham Skin Hospital that I am treating patients with injections of gold. Actually I remarked, as a matter of popular interest, that an (unnamed) colleague of mine was doing this.

ARROWROOT.

SIR ALGERNON ASPINALL (secretary of the West India Committee) writes: From inquiries which I have made recently it would appear that chemists continue to sell at fancy prices "Bermuda arrowroot" in spite of the fact that arrowroot has not been produced in Bermuda for export for many years. In support of this statement I can produce documentary evidence, if required. The principal source of arrowroot to-day is the island of St. Vincent, British West Indies, whose product is derived from identically the same plant—namely, *Maranta arundinacea*—as that formerly cultivated in Bermuda. Another grievance of the St. Vincent proprietors is that arrowroot, which is quoted on the produce market at 3½d. to 11d. per pound, is offered for sale by chemists in the pulverized condition at such exorbitant prices as 3s. 8d. per pound, and even more in many cases. I hope that by my giving publicity to these grievances and to the fact that all the leading grocers are now selling pulverized St. Vincent arrowroot at 1s. to 1s. 4d. per pound, the chemists and druggists will adjust their prices to a more reasonable figure.

DIAGNOSTIC VALUE OF THE WASSERMANN TEST.

DR. M. F. MCELLIGOTT (Wrexham) writes: Are we absolutely justified in basing a diagnosis of syphilis on a report of a positive Wassermann reaction being present? Recently I had occasion to send a patient who had had several miscarriages to a gynaecologist, who, while considering that operative intervention might help the patient to reach full term in future pregnancies, decided, as is customary in patients with such a history, to perform a preliminary Wassermann test. The reaction was found to be positive, so we sent the patient to a venereal diseases clinic with the report. The medical officer in charge very properly took a blood sample, which, on investigation, gave a negative reaction. To be quite certain about the condition a second Wassermann test was performed a fortnight later, and again a negative finding was reported. I may say that, apart from the occurrence of frequent miscarriages, there was no history and no clinical evidence of syphilis; no antisyphilitic treatment had been given. At the present day we have a number of modifications of the original Wassermann test. Would it not avoid ambiguity if a strictly uniform method were employed in all laboratories? It is recognized that the heating of the patient's serum destroys a very large percentage of its total syphilitic antibody content. The necessity for heating can be obviated by using fresh serum, and it has been demonstrated that in some cases in which an inactivated serum gives a negative reaction an active serum from the same source may prove to be positive.

AN ANTIDOTE FOR MORPHINE POISONING.

DR. F. E. LOEWY (London, W.1) writes: It is of considerable practical importance, but not yet sufficiently appreciated, that we possess a powerful stimulant of the respiratory centre—the alkaloid lobeline, which is now available in sterilized ampoules, and can be used safely under proper precautions. It has proved very effective in poisoning by morphine, hyoscine, and other depressants of the respiratory centre, and should certainly be given in cases like those reported by Mr. A. E. Mortimer Woolf on March 16th (p. 499), when respiratory failure occurs after the administration of heroin. An ampoule of 1/20 grain should be injected intravenously very slowly, drop by drop. The effect is immediate but transient, and the injection may be repeated every ten to fifteen minutes. Intramuscular or subcutaneous injection of 3/20 grain is also useful, but less reliable. Lobeline should be at hand in every operating theatre.

THE DOCTOR AND CHEMICAL WARFARE.

"V. P." writes: Many of us will have read Dr. Arthur T. Jones's letter of April 6th with the greatest satisfaction. The idea of our profession as a whole taking a definite stand against warfare of any kind, and against chemical warfare in particular, should appeal to all and help to redeem science from the evil reputation which she earned in (what we hope will always be) "the *last* war."

THE USE OF THE TONSILS.

DR. W. S. WHITCOMBE (London, W.1) writes: Dr. McNamara's letter in your issue of April 6th (p. 670) on "The use of the tonsils" will, I hope, attract the attention it deserves. In my letter published in the *Lancet* (December 8th, 1928, p. 1209) I drew serious attention to this grave subject, and I feel sure that more regard should be paid to those who, after long years of clinical experience, consider generalized tonsillectomy unwise.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 47, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *175*.

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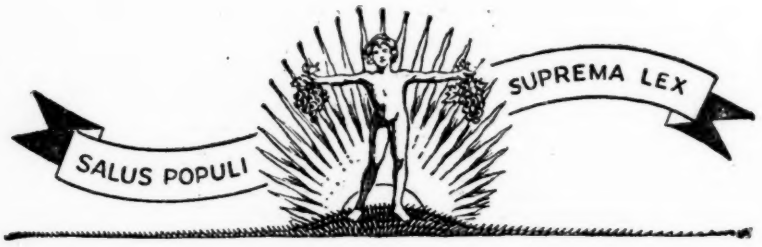

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